

**Small Scale Irrigation Schemes and Sustainable
Livelihoods in the Kassena-Nankana West District of
the Upper East Region of Ghana**

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DEDICATION

To my Dad, Damasus Thomas Achana, and to all those committed to the improvement of the lives of the under-privileged in the world.

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ABSTRACT

This thesis examines two Small Scale Irrigation Schemes in the Kassena Nankana West District of the Upper East Region of Ghana, as a poverty intervention measure. And the aim is to study how a relevant poverty intervention measure can be effectively introduced and made to empower the people as it has been designed to do.

The study, through personal interviews using the questionnaire, Focus Group Discussions (FGDs) and personal observation, discovered that the people were generally satisfied with the performance of the schemes. However, within the framework of the Sustainable Livelihoods Approach (SLA), the study uncovered several obstacles to the optimum performance of the schemes.

First, the implementation of the schemes was not properly done as stakeholders were not actively involved in the process. Issues of equitable distribution and access to land, water and inputs as well as technical support services were not adequately addressed.

Second, the ability to operate and manage the schemes with some degree of efficiency for optimum results was missing in the various communities. The outcome was a minimum level of performance and the ultimate acceptance of the status quo.

So despite claims by the people that they were satisfied with the performance of the schemes, which was also backed by statistics gathered in the field, the study concludes otherwise. This apparent divergent view is a result of the low expectations of the people in these communities regarding the performance of the schemes due partly to their inability to properly operate and manage the schemes.

Third, there was no proper coordination between departments relating to the schemes. This meant challenges facing the schemes were not being addressed as roles were not clearly defined for the various departments.

The study concludes that there is no substitute for building the capacity of the people to take control of their own affairs if poverty intervention measures are to yield a substantial benefit for the people concerned and be devoid of political talk.

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ABBREVIATIONS

AAGDS: Accelerated Agricultural Growth and Development Strategy

AgSSIP: Agricultural Sector Services Improvement Project

AB: Asset Building

CEPS: Customs, Excise and Preventive Service

CKI: Community Key Informant

CLEP: Commission on Legal Empowerment of the Poor

DA: District Assembly

DACF: District Assembly Common Fund

DFID: Department for International Development

DMHIS: District Mutual Health Insurance Scheme

EC: Electoral Commission

ECOWAS: Economic Community of West African States

FGD: Focus Group Discussion

GIDA: Ghana Irrigation Development Authority

GPRS I: Ghana Poverty Reduction Strategy I

IDA: Irrigation Development Authority

IFAD: International Fund for Agricultural Development

IRDA: Irrigation, Reclamation and Drainage Authority

KNDA: Kassena Nankana District Assembly

KNWDA: Kassena Nankana West District Assembly

KNWD: Kassena Nankana West District

LAC: Land Allocations Committee

LACOSREP I: Land Conservation and SmallHolder Rehabilitation Project I

LEP: Legal Empowerment of the Poor
MASLOC: Microfinance and Small Loans Centre
MoFA: Ministry of Food and Agriculture
NGO's: Non-Governmental Organisations
O&M: Operations and Management
SLA: Sustainable Livelihood Approach
SSIS: Small Scale Irrigation Schemes
TO: Technical Officer
UNDP: United Nations Development Programme
WUA: Water Users Association

1. INTRODUCTION

1.1 Introduction and Background

A healthy population can contribute meaningfully to the development of a nation as a whole. But good and adequate food, and other necessities like health, water, and the air we breathe, though essential to life, are unevenly distributed across the globe. Not only the distribution of food but in addition, the entitlement to it, according to the alternative view of development is also variable (Thomas 2005 in Baylis & Smith, 2005). In most of the developing countries of the global south, agriculture constitutes a greater proportion of their national economies. The agricultural sector in this part of the world is not only characterised by low productivity, but also the little that is produced hardly gets to some of the areas that are in need of food. Besides, if the capability exists for the easy transport and distribution to the relevant areas, it will not be the case that everybody would get the portion necessary for their physical nourishment due to lack of entitlement.

Agricultural production in most parts of the developing world, especially in the tropics, is rain fed. So farmers are heavily reliant on the weather for food production. But the weather has not always been an ally to the farmers. Short spells of drought often cause untold hardships for these farmers. That apart, low productivity, lack of good and sizeable farms, antiquated technology among others, further exacerbate the plight of the rural poor. These challenges sometimes raise some anxiety with regard to impending famine.

Ghana like many other developing countries has agriculture as the dominant sector. So the problem of dry spells associated with the weather pattern is not new to the country especially in the Northern Sector. But in a country where a majority of her citizens relies on rain fed agriculture for their livelihoods, how do they cope with the increasingly variable nature of the rainfall pattern in terms of food security and hence, sustaining their livelihoods?

Though urbanisation is increasing in most of the developing economies, most of the citizenry especially the poor, still live in rural areas, and agriculture remains the largest single contributor to their livelihoods. In many developing countries like Ghana, a host of poverty intervention strategies like the provision of micro-credit facilities to self-help projects, youth employment schemes, skills acquisition, women empowerment, rural infrastructural development schemes etc. exist. However, developing the agricultural sector as a complementary or the basic package of intervention is vital to poverty reduction in the developing world, both directly in the provision of food and income on the one hand and on the otherhand, indirectly through the generation of ancillary jobs away from the farm and also pushing down food prices.

Aryeetey and Kanbur (2008:9) noted that “the dominance of the agricultural sector in the economy of Ghana ensures that nearly 40% of GDP and 50% of all employment are derived from the sector”. But this colossal sector of the Ghanaian economy is unfortunately mainly rain fed. The rainfall pattern of recent has become irregular with less intensity especially in the Northern parts of the country where the dominant occupation and major source of livelihood is agriculture. The livelihoods of especially the food crop farmers in this part of the country has come under severe threat as the five months of annual rainfall seems to be decreasing. This certainly is a cause for great concern.

Bekye, in his book, *Peasant Development: The Case of Northern Ghana*, (1998), reports that seasonal drought is as much a part of the ecological make up of Northern Ghana just as its hunger related effects and consequences. He further argues that the rainfall pattern has become less predictable and less dependable to farmers than before.

This situation needs urgent attention as the farmers become vulnerable to the changing weather patterns as evidenced in the dry spells and subsequent flooding in 2007. Efforts have always been made by the relevant authorities as well as the

farmers themselves to mitigate the effects of the weather and to help sustain, if not improve upon livelihoods in this part of the country.

In the '*Meet the Press Series*' in March 2008, the Minister of Food and Agriculture, Ernest Debrah, noted that the weather conditions especially rainfall for the 2007 cropping year was not stable in the Northern Sector of the country. The rains started in March, which is regarded as an early onset but were insufficient and unreliable for any meaningful agricultural activity. He asserts, "The rains continued in April and May with intermittent dry spells cumulating into a long period of drought from the middle of May to ending of July, resulting in the wilting of early planted crops and delay in agricultural activities. The crop sector was thus seriously affected"¹. The above statement indicates the susceptibility of the farmers to the vagaries of the weather as their livelihoods almost entirely depend on their farm produce.

The rains are not only variable but in times of greater intensity, much of the water which could have been trapped for other purposes like dry season farming gets lost basically through run-offs.

The above could be a dismal picture of a people in this twenty-first century but as Bekye (1998) notes, rain failure and its accompanying hunger, together with the various effects are not new in that part of the country. It is true that the various governments in Ghana together with other development partners as well as Non-Governmental Organisations (NGO's) have made and continue to make efforts towards mitigating these effects and to improve upon the livelihoods of the people. But the question remains, with the above observation by Bekye in time past, and with the current situation not too different from that earlier on observed, why have the efforts at reducing poverty not yielded the desired outcomes in the lives of most of the rural poor farmers in the Northern sector of Ghana and

¹ http://www.ghana.gov.gh/ghana/speech_delivered_hon_ernest_debrah_minister_food_agriculture.jsp Accessed 22.05.09

specifically in the Upper East Region? Could it be that either the people are not able to fully embrace and utilise the intervention measures effectively or the various intervention measures introduced are not appropriate in solving the problems of the communities? Whatever the case may be, the current situation of the rural folks in Northern Ghana and particularly the Upper East Region seems to suggest that their plight has not been adequately addressed in terms of instituting measures to ensure a long term viability of livelihood patterns for these people. If one can claim the contrary, then why the repeated shortage of food in the Northern Sector following the subsequent floods in the latter part of 2007, which washed away food crops and some livestock?

Banik (2006:19) noted that the issue of poverty and deprivation can be considered to be a moral one and that the question now “concerns why those with the power to make fundamental changes ought to actually do so”. He further argues that “ Given that we are already aware of the nature and seriousness of deprivation around us, we need to sincerely question the effectiveness of current developmental efforts” (Ibid). This noble view broadly sets the remit of this study in the Kassena-Nankana West District of the Upper East Region, with the small scale irrigation schemes as the government’s intervention measure for the improvement of the lives of the people within the district.

1.2 Aims of the Study

The study aims at investigating the following:

- To assess the contribution of the Small Scale Irrigation Schemes in the lives of the farmers in the Kassena-Nankana West District as a means of promoting sustainable livelihoods in the Upper East Region.
- To look at the operations of the schemes and their capacities to continue to serve as either alternative or complementary sources of livelihoods for the people in the communities now and in the future.

1.3 Problem Statement

The case of the Northern Sector of Ghana as portrayed above in the introduction, served as the impetus for this study.

There have been some short spells of drought in the Northern Sector of Ghana in recent years besides the infamous 1983 drought which hit the entire country, but these short spells have often not attracted national attention. But in the cases that did and needed urgent intervention, food aid has often constituted the immediate response. For instance, such was the case in the aftermath of the drought in the Northern Sector of Ghana in 2007 and the subsequent flooding that deprived most of the people of their livelihoods. The efforts of both the Ghanaian government and the people themselves to forestall future occurrences of such situations usually left much to be desired.

However, between October 2007 and May 2008, the government of Ghana sought to improve upon the livelihoods of the rural poor in the Northern Sector through a series of intervention measures as part of the Ghana Poverty Reduction Strategy I (GPRS I). Among them is the strengthening of the Small Scale Irrigation Schemes (SSIS) to store the excess water during the rainy season which will in turn cater for the farm needs of the rural people in the dry season. To further this course, the Ghana Irrigation Development Authority (GIDA) prepared a National Irrigation Policy, Strategies and Regulatory Measures to guide irrigation development in Ghana. Though the policy is national in outlook and thus risks overlooking the specifics of irrigation as a poverty intervention measure besides the production of food, it signified the seriousness on the part of government in its efforts towards reducing poverty in the country as a whole.

These intentions of the Ghanaian leadership was also mirrored on the 12th of October 2008, in a statement by then aspiring Member of Parliament for Navrongo Central Constituency, and now the current Regional Minister of the

Upper East, Mr Mark Woyongo that “he would facilitate the construction of small irrigation dams in the area and help interested individuals to acquire small loans to help them engage in farming”². This assertion, though it was made in response to a perceived need of the people in the Kassena-Nankana District in an attempt to mitigate the effects of the weather on their livelihood, cannot be said to be void of the usual political talk in search of votes from the electorate.

As stated by Banik (2006), there is the need to sincerely question the effectiveness of current development efforts. And as Socrates maintained long ago, ‘the unexamined life is not worth living’, so one may ask, with regard to the already existing Small Scale Irrigation Schemes, how has been their performance in terms of improving upon the livelihoods of the people as an immediate intervention measure as well as their long term viability for the communities utilising them? The assesement of the contribution of these schemes to the improvement of the lives of the people in the Kassena-Nankana West District of the Upper East Region of Ghana with evidence from the Paga Nania and Kazugu schemes, delimited the scope of this study. The selection of the irrigation schemes for this study is determined partly by the fact that they can be used by a large section of the rural people in the respective communities in the district.

Focusing on irrigation, and for that matter agriculture, has an added importance in this study because as a poverty reduction strategy, it targets the poor; and where else to find the poor in the developing countries than in the rural areas? Most of these people depend on agriculture greatly for their livelihood. So for any effective poverty intervention strategy to lift these people out of their state would have to enhance their capacities in terms of agricultural productivity. It is evident that dams for small scale irrigation schemes as in the case of Paga-Nania and Kazugu are location specific, but that ought to be the orientation for effective poverty reduction strategies which aim at poverty stricken areas where majority of

² Ghana News Agency(12.10.08), <http://www.ghanadistricts.com/news/?read=19524> Accessed 22.05.09

the people depends on agriculture for their livelihood and yet are faced with chronic water shortages during certain parts of the year.

There exist other possible income generation projects like the Paga Crocodile pond, the Paga slave camps etc. that could have been developed into vibrant tourist sites in the district to augment the irrigation schemes. However, with the schemes in place, the usual seven months, which are without rainfall in that part of the country, and which in turn limits the livelihood pathways of the people seems to have been a thing of the past for these communities. But how true is this assertion? That in part, is the reason for this choice of study.

1.4 Research Questions

The study was guided by the following major questions:

- i) To what extent do the people of the Kassena-Nankana West District (KNWD) view the contributions made by the Small Scale Irrigation Schemes as an improvement of their lives?* The benefits drawn from the schemes are expected not to be limited just to the farmers as the schemes also have the potential of generating off-farm ancillary jobs. This makes it appropriate to include the view of non farmers. They were however, not included in the sample for the personal interviews as that was designed basically for the farmers who are the direct beneficiaries of the irrigation schemes. The views of non farmers were however, sought through the focus group discussions held in the respective communities.
- ii) What are the kinds of benefits drawn by farmers from the Schemes?* (This question delimits the experiences and perceptions of only the farmers as direct beneficiaries of the schemes). This includes the issues of land acquisition for irrigation purposes, the conditions attached to the process and those entitled to land in their areas as well as challenges associated with the farming. Efforts at uncovering gender issues with regard to the irrigation farming are also necessary here. Gender is relevant in this context because the poorest of the poor in the

rural areas particularly in the Northern part of Ghana, are usually women. Besides, the land tenure system denies them the right to land ownership as well as access to good and productive areas, though some of them are the breadwinners of their families. So any major poverty alleviation strategy that does not address adequately the gender issue predisposes itself for failure.

iii) Does the existence of the schemes make a difference in the lives of the people in the various communities? (This attempts to elicit issues the people see as emanating from the existence of the schemes and thus justify their continued existence in the communities as appropriate poverty intervention measures). This focuses on questioning the efficacy of intervention measures or the current developmental efforts in those areas in relation to the short term gains and their long term viability. This information is aimed at a generating a generally applicable approach to the implementation of Small Scale Irrigation Schemes as poverty intervention measures.

1.5 Rationale and Purpose of the Study

Generally, attention in much of the Ghanaian literature and more particularly in the political arena regarding the operations of the Small Scale Irrigations Schemes in the country has not been that evident. The searchlight has always been on the large irrigation schemes like the Tono Scheme in Navrongo, the Weija Scheme, the Aveyime, and Kpando Torkor, the Sata, and Akumadan Schemes, Tanoso, Subinja and the Bontanga Schemes³.

This situation is partly due to the large scale implications of these schemes economically, socially, environmentally or in terms of altering the cultural landscape and thus calling for national attention. However, the small scale irrigation schemes are a relatively new phenomena in Ghana in terms of their

³Ghana News Agency:

http://www.ghana.gov.gh/ghana/speech_delivered_hon_ernest_debrah_minister_food_agriculture.jsp Accessed 22.05.09

formalisation. These are mostly community based and serve a larger section of the rural folk especially in the Northern Sector of the country. This is an area identified to have the worst cases of deprivation as compared with the Southern Sector of the country (Aryeetey & Kanbur 2008). In this regard, the importance of these dams in the lives of the people in the KNWD is immeasurable as these are location specific in relation to the perceived needs of the people.

So, a focus on livelihood strategies like these small scale irrigation schemes for the local people, either as a complementary or alternative poverty intervention measure is necessary, hence this study.

The study intends to bring this intervention measure to light and to call for a concerted action to help sustain the livelihood activities of the people in the communities involved. In addition, it is to ascertain the dynamics of the operations of these schemes by stakeholders in terms of management options that ensure their continuous viability for the various communities. This aspect is necessary because not just the government, NGO's and other development partners who ought to be concerned but the people themselves have a role to play in improving their own lives. This is in line with the view of the International Fund for Agricultural Development (IFAD), an agency of the United Nations, which played a major role in the construction of the small scale irrigation schemes in Ghana that "Poverty reduction is not something that governments, development institutions or NGOs can do for the poor. The poor themselves have to seize responsibility, as agents of change, for their own development"⁴. However, the role of these other stakeholders cannot be over emphasised.

The study is also relevant for small scale irrigation development in the Northern Sector of Ghana specifically and the entire country as a whole to improve the livelihoods of the rural folks in terms of the small scale irrigation schemes and

⁴ <http://www.ifad.org/media/pack/rpr/7.htm> Accessed 25.09.09

for the smooth implementation of the dry season farming in the Upper East Region.

1.6 Research Methodology

Given the nature of the study, an exploratory and largely descriptive approach was deemed to be appropriate. So mixed methods were used in collecting the data for the study. Thus both quantitative and qualitative techniques were used in the process of the data collection. Each technique has its obvious shortcomings and merits, so the aim was for the limitations of one technique to be compensated for by the strengths of the other.

The study was based on two communities- Paga-Nania, a community located close to the KNWD capital (Paga) and the Ghana-Burkina Faso border, hence, its proximity to urban centres, and Kazugu, a community located about six kilometres away from the district capital. Proximity to the district capital is of importance due to the presence of fairly good commercial activities. This has significance for the people in this community in terms of the disposal of their surplus products as well as opportunities for other livelihood pathways, which may not be the case for the Kazugu community.

Both communities use the gravity system of small scale irrigation schemes. This is of relevance because it enables women and some elderly people who would not have otherwise been able to water a garden with the use of the bucket and watering Can system, to also cultivate some plots in the area.

The Paga-Nania scheme (known as Nania Gardens) was rehabilitated and fitted with irrigation facilities as from November 1993 and completed in July 1994 sponsored by the International Fund for Agricultural Development (IFAD) programme under the Land Conservation and SmallHolder Rehabilitation Project (LACOSREP I) phase I dams.

The Kazugu dam on the other hand was a community initiated project led by one of the sons of that community who recognised the potential of the area for such a

scheme which would benefit his people greatly. He discussed the prospects of the scheme with the elders and opinion leaders of the community and was able to secure their approval. The Ghana Irrigation Development Authority (GIDA) was invited to conduct some feasibility studies in the area, the results of which were favourable for such a project. This served as a basis for the writing of a project proposal for sponsorship, which gained the support of the Swiss Embassy, leading to a subsequent grant of an amount towards the construction of the dam. This amount was then supplemented in kind by the Kassena-Nankana District Assembly (KNDA) in 1998, a time when the community was still under the jurisdiction of that district assembly.

This study focuses on questioning “what” was the state of the communities before the implementation of these schemes, “why” such intervention measures were taken, and “how” the implementation, operation, management and outcome of the above intervention measures.

1.6.1 Scope of the Study

According to the Ghana Irrigation Development Authority (GIDA), the Paganania dam was originally constructed in 1960 by the then Irrigation, Reclamation and Drainage Authority (IRDA). Though one of the purposes of the dam was dry season gardening, it was mainly just a dugout with gardeners expected to draw water by the use of buckets to water their crops. This was an extremely laborious process and severely limited the productive capacity of the farmers. However, with its potential to contribute meaningfully to the improvement of the livelihoods of the people in the area, the government through IFAD, rehabilitated it in 1994 with the requisite facilities for irrigation using gravity to distribute the water to the various cultivated plots. This study, therefore, covered the period from 1994 till now to allow for the assessment of its contribution to the lives of the people in the area and its possible long term viability.

The Paga-Kazugu dam, by contrast was constructed as a grant scheme but was not properly constructed, so much water was lost in the process of conveying it to the specific plots. This was an observation made which was corroborated by the farmers' experiences through the qualitative studies.

The concrete slabs were being fixed shortly before this study drew to a close in the community. However, before the construction of this dam, some of the people, especially the men, were involved in dry season gardening with the use of personal dugout wells in the community. This is significant as it influenced the composition of the farmers who subsequently used the gravity system in this community as described in the following sections. The study also covers this dam from its inception in 1998 till now.

1.6.2 Selection of the Study Area

These two communities- Paga-Nania and Kazugu were selected for the reason that they are relatively deprived areas in the newly created Kassena-Nankana West District in the Upper East Region. But Paga-Nania could be said to be in a better position in terms of the availability of other livelihood choices for the people as compared to that of the Kazugu community.

The KNWDA being a new district in itself, which was inaugurated on the 29th of February 2008 by former President J.A Kufuor, indicates that it is generally not yet an endowed area in terms of infrastructural as well as human resource development. In fact, these were the good reasons offered for the creation of that district out of the KNDA.

The deprivation of the district as a whole, therefore, restricts the capabilities and opportunities of the people therein, hence, the need for more efforts to bring the status of the people to an acceptable standard.

An additional practical reason why the district was a convenient place for the study was its closer location to the home district of the researcher and the ability of the researcher to speak the language of the people. This made for easy

identification with the people and facilitated the data collection as the people in turn welcomed the researcher as one of their own rather than an outsider. The proximity also affords the researcher some inside knowledge of the study areas which would not have otherwise been the case for somebody from a totally different background. Much as this is a merit, the researcher is also well aware that it could also lead to personal bias.

1.6.3 Sampling Methods

Though the study targeted farmers in the Paga-Nania and Kazugu schemes which are small irrigation schemes by design, it was not possible to include all the farmers in the study. Representative samples had to be drawn from the lists of the total number of registered farmers in each scheme. These lists were obtained from the secretaries of the Water Users Associations (WUA's) at each scheme.

The secretaries served as guides for the pilot survey which was directed at some farmers in the communities who were available in the communities at the time of that exercise. This was basically to help formulate the questionnaire. The assumption was that differences between these accidentally selected farmers and the sampled farmers for the study would not be so significant as to greatly affect the outcome of the final sample that was interviewed. Besides, the sample selected for the pre-testing of the questionnaire was only for the preparatory stage leading to the actual research work.

At Paga-Nania, a total number of 170 farmers constituting those who had registered and paid their water levy was obtained from the secretary to the WUA, after a hectic tug-of-war between the researcher and the secretary due to some earlier unpleasant experiences by the secretary with regards to some financial issues of the association. The payment system for the farmers at both schemes was quite flexible. So those farmers who had not paid their water levy were but a few, though others had their names in the register who had not fully paid the levy

at the time of this study. But this latter group was regarded to be of good standing, their backlog debt notwithstanding.

In the Kazugu scheme, a list of 98 registered farmers was obtained. Again, these were farmers who had paid the water levy either partially or in full. But the dominant pattern observed here was the partial payment by instalments as against the dominant one-time full payment at the Paga-Nania scheme.

However, there were claims at both schemes to the effect that the actual farmer population exceeded what was on their registers. This was particularly the case at the Paga-Nania scheme. This assertion was corroborated by the focus group discussion session at Paga Nania. However, it was not backed by any additional record from either scheme.

Given the relatively small numbers at both schemes, the names were screened with the help of the secretaries to identify farmers who had either travelled out of the district and probably would not return before the end of the study or had died before the start of the study. This was to avoid situations of missing farmers which could adversely affect the outcome of the study and also to save time and cost in trying to reorganise the study if the missing farmers were not sorted out at an early stage.

A simple random sampling technique was then used whereby numbers were assigned to each name on the lists obtained. These numbers were shuffled and randomly picked. Those names corresponding to the numbers picked constituted the sampled list of respondents in their respective communities. This method was used to ensure that each farmer had the opportunity of being selected in the final sample without consideration being given to individual farmer characteristics.

At the end of the process, a total of 120 respondents were selected for the study. Out of this number, 40 and 80 farmers were selected respectively at Kazugu and Paga-Nania. These numbers were chosen in relation to the respective total number of farmers on each original sample frame. These were then considered as the target number to be interviewed at each scheme. The 120 farmers were those to whom the questionnaires were administered; a total of 75 men and 45 women.

One of the questions directed at the farmers concerned their income status before and after the implementation of the schemes. This certainly was difficult to establish and for those who offered figures with regard to their income status, such information is more of a guide rather than the true reflection of their states. The benefits and challenges of the schemes to the farmers were also sought. The perceptions of the people of the area as a whole, on the performance of the schemes as well as the issue of ownership, were also included in the questionnaire. Though people had different perceptions about the schemes, there was a dominant pattern which indicated that the majority of the people positively appraised the schemes, some challenges notwithstanding.

See the table below for a detailed breakdown of the respondents.

Table 1: Distribution of respondents in the communities

Community	Sex of Farmer				Total	
	Female		Male			
Paga-Nania	21	26.2%	59	73.8%	80	100%
Kazugu	24	60%	16	40%	40	100%
Total	45	37.5%	75	62.5%	120	100%

Source: Field Survey, 2009.

Observing from the table above, the female farmers at the Kazugu scheme exceeded that of the male farmers constituting 60% of the total number interviewed. This was a curious situation especially in an area where farming is generally regarded a male activity. The explanation given was that prior to the construction of the dam, most of the men were already engaged in the dry season gardening using personal dugout wells. With the inception of the dam, and given the limited irrigable area, most of the men decided that their women could work on the irrigation site which uses the gravity system and demands little effort for getting the water to the plots, while they, the men continued with their dugout system, or moved to the river side at the outskirts of the community to farm.

Others however, also cultivated some crops at the dam site but using the orthodox method (bucket and watering cans) of watering their crops.

The above arrangement is an indication that more land was put under cultivation, in addition to the fact that the women could be said to also have some modicum of economic activity to engage themselves in. This had the potential of expanding the livelihood opportunities of the respective households.

Besides the sampled farmers for the study, some opinion leaders were interviewed. For instance, the Chief of Kazugu, who was the initiator of the project in his village before he became the Chief, the secretaries to the WUA's at the schemes who kept the records of their various schemes, the selected people who controlled the flow of the water for irrigation purposes at both schemes, as well as some government functionaries relevant to this study. This was to obtain the necessary information and their opinions on the schemes in relation to the respective roles played by all stakeholders in the respective schemes. This is discussed in the ensuing chapters.

The government functionaries I interacted with: for the Kassena-Nankana West District level, the Deputy District Coordinating Director, the District Director of the Ministry of Food and Agriculture (MoFA), and the Agricultural Technical Officer (TO) in-charge of the Paga-Nania Scheme. The TO for the Kazugu scheme was however on sick leave as a result of a motor accident. At the time of this study, the district office of MoFA had not yet come out with a replacement for the Kazugu TO, meaning, the community was without one in the interim. His absence was a significant setback to the community as would be seen during the course of this study.

And for the Kasena-Nankana District level, the District Chief Executive, the Former District Director for MoFA, the District Monitoring and Evaluation Officer for MoFA, the secretary to the District WUA Council, and the District Officer for the Department of Cooperatives were interviewed.

At the regional level, the Regional Minister, the Regional Director of MoFA, the Regional Manager of Irrigation Development Authority (IDA), the Regional

Monitoring and Evaluation Officer for MoFA, were also interviewed. In all, they were 17 respondents. The table below gives the breakdown:

Table 2: Distribution of respondents for in-depth interview

Level of institution	Number of respondents
Kassena-Nankana West District	8
Kassena-Nankana District	5
Regional	4
Total	17

Source: Field Survey, 2009.

The information provided by the above people is discussed later in the report.

1.6.4 Sources of Data

Basically, data for this study were collected from two different but complementary sources. The first was written sources: a review of literature which in the first place contributed in shaping the entire study and putting it into perspective as well as providing the necessary theoretical tools within which the discussions in the study have been framed. These included books from various libraries and departments. In addition, magazines and articles were also utilised, both printed and electronic versions from the internet. In the field, some documents from various institutions like the Ministry of Food and Agriculture (MoFA), the Water Users Association (WUA's), the Irrigation Development Authority (IDA), the Department of Cooperatives were obtained and also reviewed.

Then secondly, through fieldwork, which constituted the primary source of data collected. The tools used for this source of data collection included personal interviews, Focus Group Discussions (FGDs) and observation. Basic interviews (semi-structured questionnaire) were administered to the farmers in the irrigation schemes at the various communities in the district. In addition, some key staff at various levels of management positions were interviewed. This was to permit an assessment that will reflect an evaluative perspective of the schemes, both on the

side of government on the one hand, and users (communities) on the other hand, on the implementation, existence and operations of the irrigation schemes.

The semi-structured interview technique was used because it allowed the farmers to express their views fully with regard to their activities in the schemes rather than being restricted by pre-defined options. Its appropriateness also stems from the fact that it is flexible and gives the opportunity for one to probe further for clarifications on specific issues raised by some respondents.

Two separate FGD sessions were held with a cross-section of the community members of the two selected research sites in the district. These comprised in each case not less than ten (10) people, and efforts were made through the elders and Community Key Informants (CKIs) to constitute all-inclusive groups. So the dates and times for the FGDs were selected in consultation with the opinion leaders.

The secretary to the WUA at the Kazugu scheme was asked to ensure the group was representative of the cross section of the people in the community. Having been interviewed himself in relation to the activities of the scheme, he was further assured that the focus group discussion was going to continue in that same vein. He was clearly told that the FGD was not only targeting farmers this time round but in addition, the non-farmers in the community who were also, by extension, indirect beneficiaries of the scheme. And again, the women were not to be forgotten.

Having experienced the ongoing research efforts, in addition to my initial introduction to the community, it was fairly obvious to the secretary at the Kazugu scheme that nobody in the community stood to personally benefit or lose by participating, speaking openly and frankly during the course of the research. In other words, an impression was not created that would occasion the selection of kinsfolk by the secretary for the FGD. This was because the focus of the study was clearly stated to be that of academic purposes and not an avenue for selecting beneficiaries for any immediate or intended development project. It was

an exercise for them to appraise what they already have, and how they were benefitting or not from such a scheme.

Despite these efforts aimed at curbing the bias of the secretary and for people not to misrepresent themselves, it cannot however, be held that this was completely successful since the organisation of the people for the FGDs was entirely left in the hands of those representatives.

At the Paga-Nania scheme, the secretary could not be used to organise the people for the FGD because he had lost credibility in the eyes of the farmers as a whole. In fact, there was some palpable tension in the WUA in that scheme. This was due to some unresolved internal matters in the scheme as well as a perception on the part of the secretary that the farmers generally did not like him for reasons he felt were misconstrued by the farmers who were therefore, wrongfully, vilifying him. It was observed that this made him to adopt a defensive attitude towards the farmers or anyone who wanted to inquire about the welfare of the farmers.

Faced with a secretary with credibility issues in the eyes of the farmers and a lethargic attitude towards participating in the study, the only immediate and viable option for organising the people was to use the Assembly person in the area who has been elected by the people to represent them at the district level. So the same information given to the secretary at the Kazugu scheme regarding the study and the FGD was also given to him in an attempt to again help in curbing bias in selecting the people for the FGD. Incidentally, he was also a farmer in the scheme and had earlier been interviewed in the process.

In both situations, I was present at the community chosen venues for the FGDs before the participants started arriving from their respective homes and work places. In the case of the Kazugu community, the discussion took place at the chief's palace which incidentally included the chief himself, an occurrence that was unexpected for obvious reasons including the fact that he was the initiator of the project which could make it difficult for the people to speak against it, if at all such perceptions existed. So his presence could have compromised the outcome of the FGD to some extent. For instance, some issues that emerged at the

personal interviews level, like the absence of a farmer group at the scheme, was being masked in the presence of the chief. So in trying to draw their attention to the contrary view obtained at the personal interviews, I probed to know the leaders of the group, its activities etc. which eventually called for the intervention of the chief to the effect that such a group did not exist. He went on further to admonish the people to feel free to express their views. The intervention however, did help in the sense that the people then got the impetus to open up on the various issues confronting them at the scheme.

With regard to the FGDs in both communities, it was difficult getting the people to talk at the initial stages. However, a purposive question like “*Who in their perspective could be said to be poor in their communities?*” was successful as it ignited various reactions and set the stage for further discussions. Once the discussions started, the tempo was sustained. There were no observed occasions of intimidation of any sort by members, and both men and women had their say with regard to the various questions asked. In essence, and in accordance with the objectives of organising the FGDs, it was a success.

The decision to include the non-farmers in the FGDs was important in order to capture their views on the schemes, as they were also indirect beneficiaries of the schemes. An FGD guide was prepared and used to facilitate the discussions. This allowed for probing and cross-checking of some issues which were raised during the personal interview sessions, as well as others that were not captured by the questionnaires. So in addition to the generation of data, the FGD served as a quality control tool.

Observation was also used as a complementary data generation tool. This involved visiting the dam sites to obtain first hand information on their respective states, the facilities available, the nature of the plots and how the entire schemes were generally maintained. This was a useful exercise, and complemented the above sources.

1.6.5 Limitations of the study

The first and major constraint in this study was that the district is very young, barely a year old as an administrative entity with no statistical profile and map of its territorial limits. For this reason, much of the background information, the map, and the physical characteristics have been drawn from the KNDA's profile as at the time this current KNWD was a sub-district under it. It is the case that not much has changed in the KNWD in the space of one year besides the political fact of being elevated to the status of a district.

Secondly, the period for the fieldwork fell within the rainy season for the Northern sector of Ghana. This is one of the busiest periods in the lives of the people in this area and this made it rather difficult to reach out to the respondents who were basically farmers. It had to take the patience and endurance of our guides in helping us locate each respondent. The fortunate aspect was that the locations of the farms for most of the people were not that far from the communities. For those whose farms were rather distant, appointments had to be made. Making good such appointments depended on the rains as these could be very intense in this tropical region and often rendered roads unpassable and rivers to swell to their banks, making them difficult to cross. Fortunately, the personal interviews were administered before the rains got intensive.

Thirdly, the period of the fieldwork was not long enough, leading to some pressure on both the researcher and the various people involved in the study. Some government functionaries unfortunately had the feeling that the more they delayed granting a meeting, the more their level of importance. Since the fieldwork had some timelines, the researcher was not amused by such attitudes; hence insistence on meeting some of them on particular days was seen as undue pressure being put on them. This was a challenge that was overcome by patience and resilience.

Also, besides the difficulty in reaching out to the government functionaries was the added issue of some not being in the position to readily offer the needed

information, in spite of the fact that letters of introduction and request for specific information were written to them. However, this aspect was anticipated due to the recent change of government in Ghana, and hence the various officers as well. Being new to their various positions coupled with a transitional period for most of the functionaries, made some of them very cautious in terms of offering information.

A related development was the difficulty in winning the trust of the WUA secretary for Paga-Nania due to some historical financial problems of the association. He was the one in possession of the association's documents, and well informed from his past experience, but it was difficult to obtain any information from him initially. Even the register of farmers was not readily made available due to the mistaken belief that the researcher had come to audit their accounts under the pretext of undertaking a study. It took the intervention of some elders in the community for the secretary to come to terms with who I actually said I was- a researcher. This opened the gates of dialogue for further fruitful interaction, though not for long.

The Kassena-Nankana West District (KNWD), was also deficient in terms of information on the various development projects under its jurisdiction. The devolution of power through the decentralisation process which made it an independent district further created some difficulty in obtaining documents concerning the development projects which, hitherto, were under the KNDA. Contacting the KNDA for information on these development projects did not yield much result as one was constantly being referred to the new district (KNWD) which also lacked the records on the respective projects. The result of these difficulties meant that one still had to rely on the profile for the two districts at the time they were under the umbrella of the one district-KNDA.

The above were some of the major limitations of the study. Although their influence cannot be denied, these challenges cannot be said to be enough to greatly affect the findings of the research.

1.6.6 Organisation of the Study

This study is organised into six chapters. Chapter one constitutes the problem statement and the methodological approach to the study. Chapter two deals with the theoretical and conceptual framework, and chapter three is on the profile of the KNWD. Chapter four follows with the analysis of the data culminating in the discussion of the results in chapter five. And finally, chapter six crowns the entire study with the concluding aspect.

2. THEORITICAL AND CONCEPTUAL FRAMEWORK

“Much about poverty is obvious enough. One does not need elaborate criteria, cunning measurement, or probing analysis, to recognise raw poverty and to understand its antecedents”. Amartya Sen, (Preface, 1981).

2.1 Introduction

The statement above by Sen is as true today as it was at the time it was made. However, recognising that a problem exists, is not the same as solving it. This is also true of poverty in the world. The poor today, especially in the developing countries, are still a force to reckon with. The question then is, with all the efforts and resources put into improving the lot of the poor, why do we still have a sizeable number of the world's populace as poor? Where did the world go wrong in addressing their plight?

Scholars agree that there is a growing consensus among academics, policy makers, and even politicians that poverty and inequality are no longer to be treated as soft social issues that can safely be subordinated to more fundamental interests in maximizing total economic output (Grusky & Kanbur 2006). And also that whatever the state of development theory, there is no doubt of the ethical imperative of tackling human poverty (Corbridge 1993, Goulet 1995 in Adams 2001). McNeill and St. Clair (2009) agree that there has been an increase in recent years with the expression of poverty reduction as an ethical issue in the development discourse. But they prefer that the issue be positioned as a rejuvenation rather than a new phenomenon. So, the ethical imperative of tackling poverty is not to be seen as new.

This renewed awareness of poverty as an ethical issue is not only indicative of some identified flaws with regard to the way poverty was perceived and addressed at various levels and places but failures as well.

In a related development, others also argued that policy analysis has traditionally focused on a statistical approach to poverty based on indicators of income, health, and education (Thomas 2005; Robb & Wicklin III 2008). And poverty itself, they continued, was measured by income. Using income as a measure of poverty also in turn depended on development defined as economic growth. This is considered by some to be the key to the reduction of poverty, while others argue that it tends to lead to marginalisation and greater inequality and poverty (Angelsen and Wunder 2006). The above positions reflect two major historical standpoints in the discussion about the causes of poverty- the developmentalist position, which explains poverty in terms of lack of economic advancement, normally equated with economic growth. And the second position as class-based (Marxist inspired) theories, which view poverty as a result of uneven development and exploitation, resulting in skewed asset and income distribution (ibid). And as expected, each position also goes with its attendant prescription as to how to reduce the incidence of poverty. However, I do think that in terms of poverty as it is understood as a case of multiple deprivation of social concern, the two positions above are not to be seen as mutually exclusive if a comprehensive approach is to be adopted in tackling poverty.

That apart, the approach to poverty whereby economic analyses stand out fails to capture many dimensions of poverty and a multidisciplinary approach can deepen understanding of the poor and vulnerable (Robb 2000 in Robb & Wicklin III 2008; Addison et al. 2009).

These observations above, indicate the need for alternative approaches to the issue of poverty reduction. Much has been written about the concept and it has been understood variously by those in the position to implement the various intervention measures. And the understanding of the concept is directly related to the strategies adopted to mitigate the effects. Thus, the varied understanding of the concept invariably led to the situation as seen above to be like a case of trial and error in addressing poverty. Recognising that these past policy foci on the

economic aspects have failed in addressing the issue, there is an ever more urgent need for fresh thinking and approaches to those same old problems of the world.

2.2 The Concept of Poverty

Scholars generally agree today that poverty is a multidimensional concept (Banik 2006; Hussain, Hussain and Ashfaq 2006; Burnell and Randall 2008; Addison, Hulme and Kanbur 2009; McNeill and St. Clair 2009). It is also argued that though low income is a major indicator of poverty, it is only one of several as it extends to low consumption to lack of education and poor health, environmental protection and other security provisions and political influence. Poverty and development are also seen to be inextricably linked to domestic and international politics (Banik 2006).

Poverty is said to be by far the most complex concept (Angelsen and Wunder in Banik 2006:82). In addition, concepts like poverty, which have been at the centre of international debates face the pressures of broadened interpretation. Though desirable sometimes, they run the risk of being all embracing and too inclusive, eventually degrading the concept (Ibid). But that is the reality facing the academic world when it comes to the assessment of poverty alleviation strategies. One would have to deal with a number of conceptual issues, which include the concept of poverty itself, the identification of the poor, gender differentials in access to livelihood resources, the causes of poverty and the kind of people mostly affected and under what conditions etc.

With the array of conceptual definitions of poverty together with its measurement and causes, I cannot but agree with Angelsen and Wunder (2006) that the choice of a definition is not a question of it being right or wrong, but rather of how useful it is for a particular purpose and context. Hence, it should be useful in policy debates and formulations, help in targeting and measuring the impact of specific poverty alleviation programmes and policies, also as an analytical concept to understand and analyse poverty, and to also measure changes (Ibid).

The above requirements spelt out for the concept of poverty already predispose it to being all encompassing.

However, it is further agreed that there is the need to distinguish between the conceptual analysis and the measurement of poverty. According to Angelsen and Wunder (2006), since poverty contains an important quantitative dimension, a key criterion for poverty measurement indicator is to allow for a consistent distinction between the poor, the not-so-poor and the non-poor. But yet again, I will opine that though such an approach permits the needed rigour in analysis, it is not expedient for a research project at this scale. So, that is best put on hold for further detailed studies. In line with the above distinction, the authors assert that income (monetary and non-monetary) and consumption are still key concepts that allow for comparative purposes. So they advocate the use of the Sustainable Livelihoods (SL) and the five-capital approach which will help us better understand the causes of poverty-related processes especially in specific local contexts (Ibid:86).

The above call is relevant in the context of this study as the SL approach allows the inclusion of both the multi-dimensional as well as the subjective character of the concept of poverty. I agree that any definition stipulated about poverty is bound to generate alternative views as it is characteristic of the debates on the concept itself as well as others of its ilk in the international arena. But that does not thereby invalidate such a definition as it would be for its usefulness within the context of the specific study. With these difficulties regarding the concept and the possible compromises to be made to allow for the views of others, Angelsen and Wunder (2006:87) advocate that for research purposes it may be convenient to think of poverty in terms of the livelihoods approach or the three dimensional method outlined by the World Bank (i.e. opportunity, security and empowerment), while at the same time measuring the material indicators that are closer to the original meaning of the term (i.e. income poverty). This, they assert, means that measurement should be done in terms of income, while the value of

consumption or other multi-factor indices may take into account dimensions of human development.

In view of the above discussion, I opt for the definition of poverty in terms of the sustainable livelihoods approach for practical reasons as it affords the opportunity for zeroing in on specific local conditions together with the fact that it is encompassing. In fact, a deeper delve into the five capitals will reveal an overlap between the SL approach and that of the three dimensional understanding of poverty presented by the World Bank. So, though poverty is seen to be essentially a matter of deprivation, it is defined by the SL approach and for the purpose of this study as a lack of assets needed to generate satisfactory livelihood outcomes (i.e income, well-being, vulnerability, food security and sustainable use of natural resources). The main asset categories as understood in this context are the five capitals- natural, human, social, physical and financial.

The five capitals above extend the scope of poverty beyond the material aspects of human well-being as exemplified in the social capital which includes institutions embedded in society.

In addition, the lack of these assets is not to be understood as complete absence but in relative terms. It is hardly the case that a community is in a complete lack of any or all of these assets. But their relative presence and awareness by the people also depends on how well they have been harnessed and integrated in order to effect the desired livelihood outcomes in that community. This presupposes that development agents do not introduce these assets into any community in attempt to alleviate poverty but rather build on what is present. This approach allows for development agents to look at the broader range of factors or the assets available that could be influenced through their enhancement by policies to help address the poverty situation in a relevant manner to the target area with due collaboration from the people concerned.

2.3 Predisposing Factors of Poverty

It is too simplistic to ascribe a single explanatory factor to an issue as complex as poverty. However, it cannot be denied that in any poverty situation especially in the developing world, the factors are mostly if not always interrelated. McNeill and St. Clair (2009) argued that world poverty is the result of the complex interaction of many forces at global, national and local levels. But the issue I emphasise in this context is that not only do we have these factors in a complex interaction at the various scales when it comes to assessing the general picture of poverty as a global phenomenon but even at the micro level, in terms of local conditions, the reverse of the interactions that either generate or perpetuate the poverty situations of the people concerned range from that local scale to national and also to the global forces operating at a particular given time.

Banik (2006) argues that with the increased impact of globalisation and socio-economic and political interdependence of nations, it is extremely unlikely that poverty is simply caused and reinforced by local factors. However, he went further to add that it does not mean that some well-known local causes that sustain poverty in poor nations like corruption, administrative bungling and callous disregard of the conditions of the poor by political leaders should be ignored (Ibid). So invariably, within a nation itself, there is a further diminutive version of the global forces in addition to localised factors that come into play predisposing communities and individuals to various degrees of deprivation and helplessness. For instance, market forces that determine the prices of agricultural products as well as inputs which sometimes go beyond the direct control of some national governments do exacerbate the plight of the poor who mostly depend on the primary sector in the developing world for their livelihoods.

Besides, some internal policies of some national governments in the developing world contribute to large differences in rural and regional poverty levels. So there are several causes that can be attributed to the existence of poverty in any given place and at different scales too.

According to Bradshaw (2006)⁵ “anti-poverty programs are designed, selected, and implemented in response to different theories about the cause of poverty that ‘justify’ the community development interventions”. He argued that the definition of poverty and theories that explain it are deeply rooted in strongly held research traditions and political values, reinforced by encompassing social, political and economic institutions that have a stake in the issue (Ibid). In this vein, he states that there are a number of competing theories of poverty but most are variants of one another and that no one theory of poverty has emerged that either subsumes or invalidates the others.

He hinted that the kind of theory that is perceived to be of dominance in a particular area and can be said to be the cause of poverty in that particular area determines the kind of poverty reduction strategy that is introduced to mitigate the effects. In other words, efforts at reducing poverty should be relevant to the local conditions of the people that are either directly or indirectly implicated in the poverty situation of the people. Therefore, it makes a difference which theory is believed to be responsible for the problem being addressed in the effort to reduce poverty in specific areas as that determines the strategy used.

Bradshaw (2006) then points out five theories of poverty that place their origins in the following; first, is that of individual deficiencies, which blames individuals in poverty for creating their own problems, and therefore argues that with harder work and better choices the poor could have avoided and possibly remedy their problems. This cannot be entirely contested because the poor do have a role to play in helping themselves out of their situation, but it cannot also be wholly accepted that the blame is to be on the poor for their predicament. In any nation with an active government, the state owes it to the people to provide a certain level of basic services. These services then provide some leverage to the individuals to widen their choices and hence their livelihoods. Short of this, the

⁵ <http://www.rupri.org/Forms/WP06-05.pdf> Accessed 13.11.09

above theory aimed at blaming the individual for being the cause of his/her predicament cannot be accepted in the context of this study.

The second theory is that some cultural beliefs support subcultures in poverty. This has been seen not to explicitly stand as an independent theory as it is linked to either that of the individual deficiencies or the other relevant theories. This theory suggests that poverty is created by the transmission over generations of a set of beliefs, values, and skills that are socially generated but individually held. However, in this case, the individuals are not necessarily to blame because they are victims of their dysfunctional subculture or culture. Again, though this is a possibility in certain contexts, it is gradually becoming difficult to keep individuals of a particular culture or subculture locked up in similar circumstances due to the influence of globalisation and the flow of information. This predisposes individuals to break out of the jinx to build their own lives differently from what pertains in their society of orientation.

The third theory postulated by Bradshaw is that of political-economic distortions which he argues is a progressive social theory on the causes of poverty. In this theory the economic, political, and social systems are seen to be responsible for people having limited opportunities and resources with which to achieve income and wellbeing. I do agree to a large extent with this view as many of the instances especially in the developing countries can be said to emanate from the system that has been put in place over the years. Sometimes, the system is designed to protect the poor but due to factors that probably were not captured or ignored, invariably limits the chances of the people. In fact, this theory is relevant in the case of the people of the KNWD in the Upper East Region of Ghana. However, the poverty situation of a particular people cannot be explained away by one theory.

The fourth theory is that of the existence of geographical disparities. This characterisation of poverty as a spatial phenomenon also builds on other theories. This theory basically orients development agents to the fact that people, institutions, and cultures in certain areas lack the objective resources needed to

generate wellbeing and income, and that these deprived people also lack the power to claim redistribution. It is without doubt that poverty is most intense in certain areas and there are explanations as to how regions lack the necessary resources to compete. Hence at the global level one can talk about the West and East, as well as the North and South disparities. In the case of Africa, the North and South are relatively better off than the Sub-saharan Africa. And these differences are further replicated within nations- as it's the case of the comparatively better off Southern sector of Ghana as against the deprived Northern sector. And the disparities further exist in terms of Rural and Urban dwellers. So this theory is also relevant for the situation in Northern Ghana and for this study as it takes into consideration the peculiar nature of specific areas and the factors that could be said to account for the poverty situation therein. However, one has to tread cautiously with the above theory so as not to slip into Environmental Determinism. But this caution does in no way diminish the potency of the theory to explain intrinsic factors of particular places as being partly responsible for the predicaments of some particular groups of people.

The final theory is that of cumulative and cyclical interdependencies. This appears to be the most complex of the theories above and builds on aspects of all the other theories. It looks at individuals and their communities as caught in a spiral of opportunity and problems, and that once problems dominate, they close other opportunities and create a cumulative set of problems that make any effective response nearly impossible (Bradshaw 2000 as in Bradshaw 2006). The cyclical explanation accordingly looks at individual situations and community resources as mutually dependent as it is exemplified in a faltering economy, creating individuals who lack resources to participate in the economy, which makes economic survival even harder for the community since people pay fewer taxes. This is particularly important for the KNWD in the Upper East Region since the District Assembly Common Fund (DACF), released by the central government for developmental purposes is largely tied to the percentage of internally generated funds by each district.

These basic theories of poverty find expression either directly or indirectly in policy discussions and community development programmes aimed at reducing poverty. It is appropriate to state that though these could be seen as different theories, in practice they are not mutually exclusive, given the fact that poverty results from multiple deprivation and also in certain cases, being deprived in one area further leads to deprivation in other areas as well. This implies that a poverty reduction strategy that addresses the complex of factors that can be alluded to as causes, stands the chance of attaining success as compared to a strategy that aims at addressing the poverty situation from the orientation of a single theory.

In addition, it could be said that Bradshaw was orientated towards urban and suburban poverty but the theories are applicable to poverty at various scales with different levels of emphasis at the various scales and time.

For the KNWD, though the immediate manifestations of poverty could be felt as a result of deprivation in many areas, one cannot state that such a case is entirely unique. But the crux lies in the fact that the situation in that district as compared to other districts in the country is certainly a cause for concern. This is in line with the findings of IFAD, which locates the poor in Ghana predominantly in the savannah regions of the north, where many poor rural people face chronic food insecurity.⁶ In addition, poverty in this part of Ghana is said to be deepest among food crop farmers, who are mainly traditional small-scale producers. And about six out of ten small-scale farmers are poor, and many of them are women (Ibid). Among the causes of poverty in those areas are reliance on rainfed agriculture which leads to low productivity and poorly functioning markets for agricultural products, antiquated technology, lack of education and relevant skills and agricultural inputs like fertilizers and improved seed, loss of soil fertility, lack of credit facilities, lack of assets, unemployment etc. which are localised factors but the picture is certainly bigger than it appears with these causes.

⁶ Ghana Rural Poverty Portal: <http://www.ruralpovertyportal.org/web/guest/country/home/tags/ghana> Accessed 26.09.09

The factors above cut across a number of theories on the causes of poverty as elaborated earlier. But some theories like the political-economic system, the geographical disparities in terms of the uneven distribution of resources, and the cyclical interdependencies are more present in the above factors. So for any poverty intervention strategy, as in this case of the small scale irrigation schemes to be successful, it has to necessarily be encompassing in addressing the issues across the board. And as to whether the small scale schemes do meet this criterion as a poverty intervention measure in the KNWD is to be seen as the study unfolds.

2.4 The Need for a Paradigm Shift

The ever needed shift in focus on poverty reduction strategies and the upsurge of new concepts and approaches especially in the “South” as Moser (2008:43) in her chapter on *Assets and Livelihoods: A Framework for Asset-Based Social Policy*, argues, happened in the past two decades. This shift is evident in the shift from residual welfare poverty alleviation strategies, commonly associated with safety nets, to social protection poverty reduction policies. Moser further identified the social protection poverty reduction policies to have a far broader mandate, incorporating risk prevention and mitigating strategies, as well as perennially necessary safety nets (Ibid).

However, these social protection poverty reduction policies have not wholly, if ever, shifted from the element of economic analysis in terms of their focus. Moser (2008:43) acknowledged that the above shift in strategy still leaves much to be desired, as social protection in practice still tends to focus on income/consumption ‘protection’ of the poor through the provision of cash transfers and other residual welfare provisions (Ibid). In other words, the fresh thinking has not yet fully permeated the poverty reduction approaches in addressing the issue and the legitimate question as to - what went wrong this time

round, again resulting in this failure to adequately address the shortcomings of the approaches resurfaces.

A look at the small scale irrigation schemes in the Kassena-Nankana West District, revealed the intervention was perceived by the government of Ghana, through its decentralised units at the district level, as a complementary livelihood strategy to poverty reduction in these communities and also an offer of opportunity to the people to expand their capabilities in terms of food production and a subsequent generation of household income. These considerations are legitimate, but good-will is not enough to make the strategy function in a manner that would bring the full benefits to these communities. The underlying assumption was that in whichever community these interventions were introduced, the schemes were to be community operated and managed. This meant that the people were considered capable of actually doing so. In the light of this shift and fresh thinking added to the poverty reduction approaches, this would have been an advantage to the communities, based on the livelihood resources available and the ability of the people to combine these effectively in order to derive the expected livelihood outcomes from the schemes. If this were manifest, then the object of improving upon the lives of these people in a sustained manner would have been on track.

So these questions stand- to what extent does this strategy actually empower the people in the manner it has been designed to do? And what are the prospects and challenges to the continual existence of such schemes to sustain the gains, if any, that are made? This particular question in relation to sustainability is of prime importance in this study and for any livelihood strategy because the schemes in Paga-Nania and Kazugu have to possess the capacity to empower and improve upon the living conditions of the people in a sustainable manner in such a way as not to make them continuously dependent on such schemes.

The concept of Sustainable Livelihoods (SL) which is encompassing and thus incorporating this paradigm shift in its outlook and an approach to poverty

reduction is the basic framework within which these concerns are addressed in this study.

2.5 Other Theoretical Approaches to Poverty Reduction

The renowned economist, Amartya Sen (1981) noted that other approaches to the concept of poverty like the Biological, Inequality, and the Relative deprivation have been in use by scholars. These approaches, however, he argued, have come under intense criticism.⁷ Sen (1981) though acknowledge such criticism argues that it does not mean such approaches should be ignored but rather some concerted efforts have to be made to identify what is left of them to be salvaged. In agreeing with Sen, I am of the opinion that such criticisms in the academic parlance are needed in order to help shape theories and ideas appropriately which fosters improvements.

These approaches identified by Sen have also been classified as conventional approaches to the understanding of poverty which are also often criticised for providing ‘outsider’ or ‘expert’ explanations of poverty rather than taking into account the daily hardships that characterise the lives of the poor (Banik 2006:15). This statement is indicative of the need for either refined or alternative approaches to the understanding of poverty since the conventional approaches do not have any real meaning for poor.

Banik identifies several other approaches including the vulnerability, entitlement and capability approaches, which he categorised as participatory approaches. These latter approaches, though contain some slight differences in themselves, and as well strengthen each other, do to a large extent gravitate among the Livelihood assets or resources known as the five capitals in the Sustainable Livelihood (SL) approach.

⁷ See, Sen, (1981: 12-17) for details.

However, Ben Crow (2000) indicates that the entitlement approach, though part of the participatory approaches mentioned above, focuses on the social relations through which people gain command or entitlement over food. This approach, which has been put up by Amartya Sen has two basic features- endowments and entitlements which give access to livelihoods and food. In view of its potential especially as combined with the capability approach by Drèze and Sen (1989:12-13), imbues it with the potential to analyse the livelihoods of the people in the Kassena-Nankana West District in terms of food security in relation to the contributions of the Small Scale Irrigation Schemes.

Another emerging and promising approach to poverty reduction is the Asset Building (AB) framework as presented by Moser in her chapter on *Assets and Livelihoods: A Framework for Asset-Based Social Policy* (Moser & Dani 2008: 43). But this approach to poverty reduction is relatively new and still requires more research on it for further understanding.

The underlying assumptions running through their book *Assets, Livelihoods, and Social Policy*, edited by Dani and Moser (2008), have also been clearly stated. And a closer examination these assumptions reveals that they fall short of application in pure rural communities like that of Paga-Nania and Paga-Kazugu where this study is situated. These assumptions are that people themselves: (a) are well placed to utilise their assets and exercise choice in the pursuit of their livelihoods, *provided they have access to assets*; (emphasis mine). (b) are equipped with the means and skills to obtain value (or valorize) these assets; and (c) have the information and the ability to benefit from transformations in the rules and regulations governing those assets (Moser & Dani 2008:6). These among others formed the basis for the Asset Building (AB) approach advocated by Moser.

However, I see Moser's focus to be more on policy at macro-level. Though macro-level analysis is important, in poverty reduction, it cannot take the centre stage as poverty applies to individuals and households. This means the micro-level analysis in relation to poverty reduction strategies is not in any way to be

downplayed. But, just like the criticism of the earlier conventional approaches, if the AB framework does not wholly lend itself for analysing micro-level reality like the case of Paga-Nania and Kazugu communities, it does not diminish the relevance of such a novel approach.

But having been in the communities and interacted as well as observed their lifestyles, I argue that these assumptions hardly hold as true in their entirety in those places. So, though the AB framework can be used for analysis at the micro-level, it will not be expedient for the communities under study.

The AB approach does have some merits and is applicable in some places under certain conditions, the aforementioned assumptions notwithstanding. But there is the need for circumspection in the context of this study.

There are other relatively new approaches to poverty reduction like the Legal Empowerment of the Poor (LEP) popularised by the Commission on the Legal Empowerment of the Poor (CLEP)⁸. But yet again, there are a lot of intricacies involving this approach which also need some further testing before the poor can be empowered to insist on their rights to their entitlements, if even the structures to facilitate those rights do exist and are independent enough to give a fair hearing to the poor. The poor are also to be enabled to access the justice system where and when their rights are denied them.

These and other constraints, make this strategy difficult for widespread implementation in the near future in those areas where it is relevant. Not just the internal constraints in themselves but that those responsible to make sure the system works in the first place probably would be the target of this very approach. Hence, it would be like a situation of sharpening a knife for one's own throat in the view of those at the helm of affairs.

⁸ Banik 2009: *Hague Journal on the Rule of Law*, 1: 117–131: Legal Empowerment as a Conceptual and Operational Tool in Poverty Eradication, in http://www.sum.uio.no/pdf/publications/articles-bookchapters/2009_Banik_article.pdf Accessed 25.09.09

These poverty reduction strategies, Entitlement, Asset Building, Legal Empowerment of the poor, and the Rights Based approach, which sees poverty as a violation of human rights, the Capability approach, the Sustainable Livelihood approach etc, reflect the complexity of the problem they attempt to address-poverty. Much as each approach has its inherent merits and setbacks, no particular approach can be said to be the best in tackling poverty. If we had a best poverty reduction strategy, then poverty would have been eradicated by now. But there are strategies that are more comprehensive or more relevant in certain contexts than others. In this direction, the capability approach is seen as one of the current poverty reduction strategies that has the potential of making inroads. The Human Rights approach too has been championed by the United Nations Development Programme (UNDP), which presents poverty as a violation of human rights. It has its variants in the Legal Empowerment of the poor. In short, it cannot be said that one approach supercedes the other specifically but each one is more relevant in certain contexts and conditions.

Useful as these strategies may be, specific local conditions make some more relevant for some communities than others. In this light, I opt for the purpose of this study, to use the SL approach in framing the discussion on assessing the irrigation schemes at both Paga-Nania and Kazugu communities for reasons outlined in the next section.

2.6 The Sustainable Livelihoods (SL) Framework

The SL framework has been recognised to be linked to social protection, just like the other participatory approaches but it has the added merit of shifting the focus from income and consumption to addressing directly the critical role played by assets and capabilities in improving individual and household social and economic well-being and associated poverty reduction (Moser 2008:43 in Moser & Dani 2008).

Therefore, the irrigation schemes in Paga-Nania and Kuzugu, in addition to providing the people with a reliable source of livelihood in a hitherto lean season, also capture the overall livelihood endowments of these communities and the capacity of the people to effectively combine these to improve upon their livelihoods as a whole. This locally oriented focus of the SL makes it an improved approach to poverty reduction strategies if appropriately applied and adapted to suit the people in question.

Another edge of the SL approach is that while the other approaches may have specific predominant areas of concentration, it has the quality of assessing all possibilities available to the people in question and their over all capacity to effectively combine what they already have to come out with the best adaptive outcomes that will have a long term viability for the poor. So the understanding of the livelihoods of the poor and the encouragement of policies that will positively affect their livelihoods by different sectors is also at the centre of the SL approach.

Moser, though she acknowledged the potential of the SL framework as a poverty reduction approach, also indicated that its emphasis on the livelihoods as such, reduces the importance of Asset Building (AB) and accumulation and longer term consolidation of assets. But much as this concern is legitimate, it is also the case that research on rural livelihoods must make difficult choices, because the encompassing character of the livelihoods concept means that any aspect of the way people go about gaining a living is potentially legitimate to investigate (Ellis & Freeman 2004)⁹.

How one applies the SL framework will greatly depend on what is understood as a livelihood more specifically, and whether it does exclude asset building and accumulation as claimed by Moser.

For this study, a livelihood is understood in line with that held by Brabben et al (2004) to comprise the capabilities, assets and activities required for a means of

⁹ Ellis F. & Freeman A., : Journal of Development Studies, Vol. 40. No. 4, April 2004.

living. And if this is understood to extend beyond just employment to all the activities *required* (emphasis mine) for a means of living, then it cannot be said to exclude asset building as argued by Moser. As an approach like any other, it has its down sides especially when it comes to practice. But this does not divest it of its contribution to poverty reduction. And as noted by Sen earlier, criticism of an approach does not mean it has to be ignored but that efforts ought to be made to strengthen it.

The approach further seeks to gain an accurate understanding of people's assets or capital endowments and how they convert these into livelihood outcomes. The approach is founded on the belief that people require a range of assets to achieve positive livelihood outcomes, with no single category of assets on its own sufficient to yield all the many and varied livelihood outcomes that people seek (DFID 2000:5 in Moser & Dani 2008:53-54). Thus, the integral outlook of this approach makes it relevant for the assessment of the small scale irrigation schemes in Paga-Nania and Kazugu.

For the irrigation schemes to have been considered as the appropriate intervention measure, an assessment of the various livelihood assets- Human, Physical, Social, Financial, and Natural capitals- had to be considered. And it is true that in any part of the country (Ghana), just as in any country in the world, these capitals exist but to varying degrees irrespective of whether the people in those areas in question are aware of them or not. In addition, the level at which a community can make use of a poverty reduction strategy is dependent on the complex interaction of all of these capitals.

In this regard, with the implementation of these schemes, it is taken as given that all the requirements above, in a bid to improve upon the livelihoods of the people in these areas have been adequately considered. This means that the people will be able to effectively combine the livelihoods resources in order to benefit from the optimum livelihood outcomes albeit, the mediating institutional processes and organisational structures in the Kassena-Nankana West District specifically, and the Upper East Region and Ghana as a whole. How true this assertion is in

relation to the intervention measure in question will be revealed as this study unfolds.

The framework, as portrayed above, therefore, encourages an assessment of all the sectors that either facilitate or obstruct the ability of the people to make use of these resources to improve upon their conditions of life. Thus, in any poverty reduction strategy, the active participation of all stakeholders-development agents, community and the state as evidenced in the political leadership and the rules and laws are required. And the ability of the SL to lend itself to analysing all these aspects in the communities is what in my opinion makes it more appropriate for this study.

The SL has been used in a variety of forms by several development agencies for sometime now, which demands that some evaluations of its successes and failures as a conceptual framework be done. Some of the prominent strengths of the framework as stipulated by Moser include the fact that it is people-centred, which means it has participatory processes and also involves multidisciplinary teams¹⁰. Secondly, it has a multisectoral focus, and thirdly, it has an interdisciplinary approach which recognises that rural people do not have one basic occupation but rather multiple income sources¹¹.

On the downside of the framework, Moser noted that at the organizational level, the sectoral character of many agencies makes its complete adoption complicated because of the difficulty in identifying the best thematic fit for the livelihood agenda. Though true that it is a difficult framework to apply, and also complex in outlook, I think the lead organisation in any project requiring the application of this framework has to recognise the encompassing nature of the concept of livelihood and thus define specifically the aspects to lay emphasis on while co-opting the other sectors at relevant points within the framework. Thus a shared understanding of what a multisectoral approach entails can be sought. This could

¹⁰ Moser C., : Moser & Dani (2008).

¹¹ Ibid.

appear too simplistic a solution especially as it appears in theory but, that notwithstanding, it can lend a degree of support in a bid to adopt the multisectoral approach. So I view the above critique, to stem from the intrinsic nature of the multisectoral co-operation rather than an independent shortcoming of the SL framework.

The second identified weakness is at the political level where it purportedly fails to adequately address issues of politics, power and voice, rights and empowerment. This yet again though true, depends on the sector or development agency applying the framework and also the problem or issues the agency intends addressing. Moreover, it cannot entirely be the case that it inadequately addresses the political aspect if the framework is appropriately applied and the relevant scale of analysis is also clearly defined.

Social capital under the framework, as a livelihood resource captures this particular aspect and can be utilised as much as the environment allows. If it fails, then it is that particular livelihood resource which is not clearly manifested in a specific way and hence constitutes an obstacle to the attainment of the goals of the strategy. But, a failure of a part cannot be seen as that for the whole since a whole is larger than the individual parts.

Thirdly, others see the SL to be limited in terms of micro-macro linkages. Though the SL is good at the micro-level as it is context specific, it at the same time limits its potential for designing macro-level model that can be used for the implementation of national-level strategies to improve livelihoods (Solesbury 2003 in Moser & Dani 2008). Yet again, the recognition of the specificity of the framework in itself indicates that though it is encompassing in outlook, there is the need for a clear definition of the ambit of application. So I differ in relation to this critique.

The issues being considered will determine the level at which the approach can be used. In terms of social issues and particularly the concept of poverty, as the case in point, it cannot under any circumstance be assumed that society is ubiquitous in this regard. The differences on the other hand cannot also be so

much stressed as to ignore some major trends within the populations. Thus, in dealing with poverty reduction, it cannot be said that an entire nation is at the same level of poverty and requires the intervention measure that will demand the use of this framework without consideration being given to the specificities within the nation itself. Besides, if the above were the case in any nation, scaling up the SL will require some modifications as would be the case for any well meaning poverty reduction strategy.

Scholarly work on poverty indicates that it applies to individuals and households but it is development that applies to large scale processes of change. The framework, therefore, as earlier on noted, seeks to gain an accurate understanding of people's assets or livelihood resources and how they convert these into livelihood outcomes. To do this requires a focus, and a delimitation of the area of application of the framework which is critical to any meaningful analysis.

The SL approach at best is to aid in the analysis of poverty reduction as indicated by its origin and focus, but not as a policy tool in itself, though it aims at influencing policy. It is relevant here to understand that the World Bank many a time operates at the macro-level and lumps populations within nations together as having a specific trait-developing, poor etc. But, one cannot lose sight of the fact that in terms of poverty, there are notable variations within nations themselves, localities as well as even families. So an approach that ignores the respective micro or macro-level differences likely bears the seed for its own failure. In this vein, for the framework to work effectively at the macro-level, it is incumbent upon national governments which receive these packages from the World Bank to implement poverty reduction programmes to first unpack them, repack and implement them in accordance with the specific conditions and needs of their people without losing sight of the original aim of the package. And this is just where the SL framework becomes relevant.

Extending the framework to macro-level reality will require some modifications to be done to permit the varied background situations of the wider public of the

particular nation in question. Short of this and transposing it on a wholesale basis at the macro-level would probably be a misunderstanding of the SL framework as a whole.

Failure of the SL at the macro-level, therefore, cannot be taken to be an intrinsic shortcoming as Solesbury intends to portray. As Scoones (1998) notes;

The framework can be applied at a range of different scales- from individual, to household, to household cluster, to extended kin grouping, to village, region or even nation, with sustainable livelihood outcomes assessed at different levels. The specification of the scale of analysis is therefore critical, as is an analysis of the interactions between levels in terms of net livelihood effect, both positive and negative¹².

The above observation by Scoones shows the flexibility of the framework. So, with the limitations of the SL approach stated above, it does not have to lead to the point where the framework is oversimplified in its outlook to the extent that it drastically reduces its relevance today as an analytical tool for poverty reduction. Though it is noted by Sen (1999) that any empirical discipline will be impossible if simplifications were to be ruled out, the particular simplification matters in relation to its effects on the issue simplified.

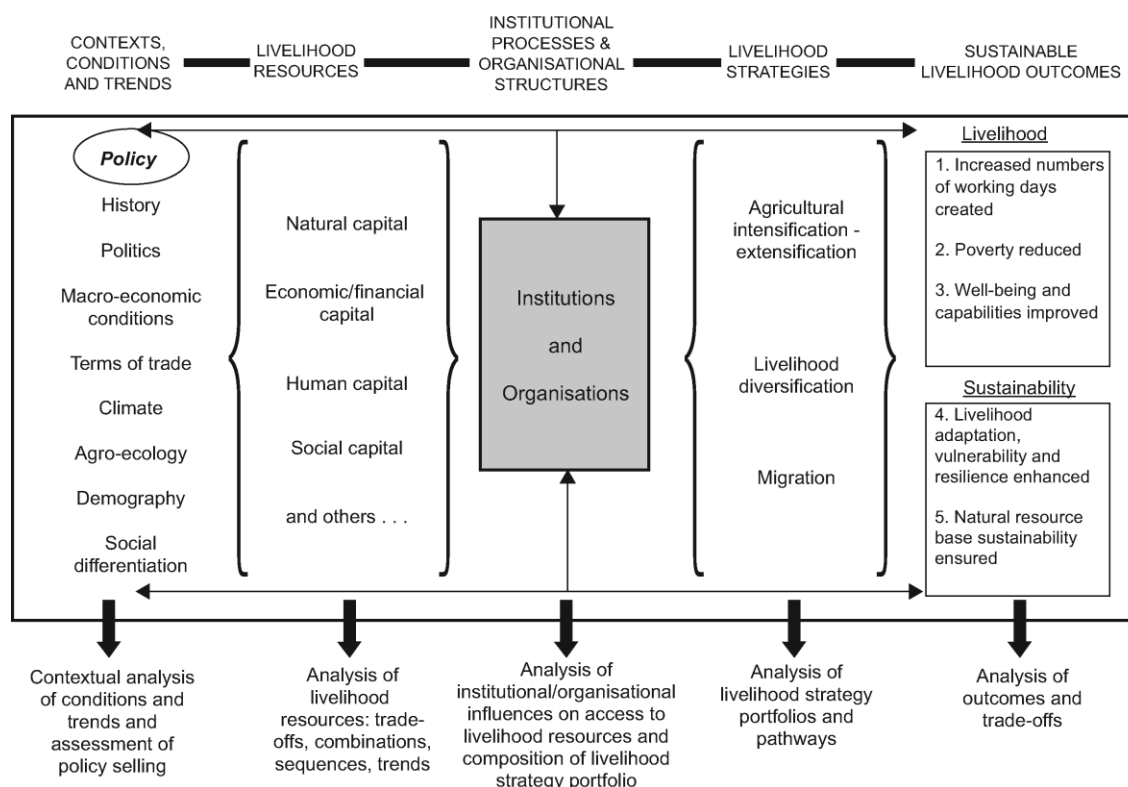
As revealed by the diagram of the SL framework below, there are several livelihood strategies like Agricultural intensification-extensification, Livelihood diversification and Migration- that could have been investigated in any setting. I however, chose to investigate the agricultural extensification (more land under cultivation)¹³ option as a livelihood strategy aimed at reducing poverty in the Kassena-Nankana West District of the Upper East Region of Ghana. The focus is further narrowed to the dry season small scale irrigation farming as the selected

¹² Scoones I. (1998): *Sustainable Rural Livelihoods: A Framework for Analysis*, IDS Working Paper 72, 1998, Institute of development Studies.

¹³ Ibid.

pathway to improving the lives of the people of the Paga-Nania and Kazugu communities.

Figure 1: Sustainable Livelihoods Framework



Source:

<http://graduateinstitute.ch/webdav/site/developpement/shared/developpement/mdev/soutienauxcours0809/Gironde%20Pauvrete/Sustainable%20Rural%20Livelihoods%20-%20Scoones.pdf> Accessed 18.09.09

It is evident that not all the livelihood strategies in the above framework are in specific focus in this study, but all are likely to be related to agriculture. I shall deal with this concern in the ensuing chapters. Additionally, for a fruitful analysis of the livelihood strategies, it is appropriate to recognise that the livelihood resources at any given time and place or level exist in different degrees and also that particular ones or a combination of several are needed for different livelihood strategies. This brings out a complex network of linkages between the livelihood resources and livelihood strategies and also among the strategies themselves.

The thrust of the argument is that the SL framework is not just to be seen as an analytical tool that merely sustains the livelihoods of the people but as well embodies the capacity to expand the opportunities presented by their specific conditions and empowers them to utilise such opportunities to improve upon their lives. So this needs to be taken care of in any poverty intervention measure. Expanding the opportunities for people could be done in various ways and the immediate consideration is the aspect of making known to the people the extent of availability of the livelihood resources and possible ways of effectively combining them to obtain the optimum livelihood outcome.

The merits of this approach as stated earlier do manifest overtly in the fact that it captures livelihoods in an encompassing manner by using the livelihood assets or resources in the above diagram also known as the capital assets of the poor popularly termed as the five capitals (Human, Physical, Social, Financial, and Natural assets), as a way of organising and representing the complex thinking about how livelihood opportunities are constrained or enhanced. It is an approach that has been used under various different forms by researchers concerned with poverty reduction, sustainability, and livelihood strategies (Ellis 1999, Moser 2008:51).

The Paga Nania and Kazugu Schemes that are of concern in this study are mainly utilised by people in the dry season and they constitute the major occupation for them in their respective communities. This means that for a particular period within the course of the year, the major livelihood strategy of these farmers revolves around these schemes. However, right from the design, implementation, operation, management of the schemes, to the actual practice of the farming throughout the season to the harvesting of their produce, there are intermediate issues which ought to be assessed in order to ascertain the role of these schemes in the lives of these farmers.

Putting these schemes under study will reveal the specific considerations that were taken into account to enhance their efficiency. These considerations could

to a large extent apply to similar schemes under similar circumstances implemented elsewhere within the country with the aim of empowering and enhancing the livelihood choices of the people in a sustainable manner.

Addressing these issues in the irrigation farming, thus needs an integrated approach. So for one to benefit from a multi-dimensional approach, the SL framework has been selected as the basic approach while drawing on the various participatory approaches, when and where necessary for the analysis.

Besides gaining various insights with the above all-embracing approach, if at anytime in the course of the study a situation calls for individual level assessment, the relevant approach, (capability approach etc), among the repertoire of analytical frameworks discussed earlier could be called into service to illumine issues that could probably be lost in the composite approach.

2.7 Conceptual Definitions

For the purpose of this study, the following terms are to be understood as follows:

Irrigation: a kind of farming system that involves the application of water to plants for all or part of the growing season to meet all or part of the crop water requirements as well as controlling excess soil moisture through drainage and the adaptation of cropping practices and farming systems to optimise water use¹⁴.

Small Scale: this involves irrigation activities on small plots, comprising a small number of farmers, using relatively small reservoirs- rivers, dams or a cluster of wells controlled by the farmers using technology they can operate and maintain. In this study, the reservoirs in focus are the small dams that have been constructed and fitted with the irrigation facilities for use by the communities in question.

¹⁴ Adams W. M. & Carter R. C. (1987): Small-scale Irrigation in Sub-Saharan Africa, in <http://ppg.sagepub.com/cgi/content/refs/11/1/1> Accessed 02.06.09

Sustainable Livelihoods: in the context of this study should be understood based on what has been used by the Department for International Development (DFID) in its sustainable livelihoods approach, (DFID, 1999). “A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with, and recover from, stresses and shocks and maintain or enhance its capabilities and assets, both now and in the future, while not undermining the natural resource base.”¹⁵

Poverty: I use the concept in line with relative poverty and social exclusion as held by Peter Townsend as cited by Alan (2000, p.12), that

“Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the types of diets, participate in the activities and have the living conditions and amenities which are customary, or at least widely accepted and approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities”.

So, in effect, poverty in this context is to be understood as the inability of one to meet his/her needs either personal or societal deprivation that will make such an individual a fully integral part of the society in which one lives.

Livelihood resources or assets: These are the basic material and social, tangible and intangible assets that are available to people in any community. These are also known as the five capitals.

Livelihood strategies or pathways: These are the major opportunities or the range of basic options that are open to the rural people in a particular community. In the SL framework, these have been classified into three broad clusters-

¹⁵ Brabben T. et al (2004) : Irrigation can sustain rural livelihoods: evidence from Bangladesh and Nepal, in http://www.dfid-kar-water.net/w5outputs/electronic_outputs/od151.pdf Accessed 09.05.09

agricultural intensification/extensification, livelihood diversification, and migration. One gains more or less from each category and mostly pursues a combination of them together or in sequence.

Livelihood outcomes: these are the results attained from the livelihood strategies through the effective combination of the livelihood assets.

Human capital: the skills, knowledge, ability to labour and good health and physical capability important for successful pursuit of different livelihood strategies.

Physical capital: this refers basically to the built environment which comprises the stock of plant, equipment, infrastructure, and other productive resources owned by individuals, the business sector, or the country itself that enable people to pursue their livelihoods.

Social capital: the social resources (networks, membership of groups, relationship of trust, access to wider institutions of society) upon which people draw in pursuit of livelihoods.

Financial capital: the financial resources which are available to people (whether savings, supplies of credit or regular remittances or pensions) which provide them with different livelihood options.

Natural capital: the natural resource stocks (soil, water air, genetic resource etc.) and environmental services (hydrological cycle, pollution sinks etc.) from which resource flows and services useful for livelihoods are derived.

The next chapter deals with the study area and the general setting within which the schemes in the Kassena-Nankana West District were introduced, especially the political institutions that together have the task of making the intervention measure a success.

3. BACKGROUND OF THE STUDY AREA

3.1 Background of the Kassena-Nankana West District

The Kassena-Nankana West District (KNWD) with its capital Paga is one of the new districts and municipalities created in 2007 by the former President of Ghana, J. A. Kufuor and inaugurated at their various locations simultaneously on 29.02.2008. The KNWD was carved out of the current Kassena-Nankana District. So at the time of collecting data for this study, relevant information about the district was difficult to obtain.

The KNWD, though a young district, has not significantly changed in terms of its characteristics from that of the KND just within a year of its creation. The KNWD was carved out using the already existing demarcations for the Chiana-Paga constituency. This was in accordance with the EC requirement that no constituency should fall within two administrative districts. The reactions to the demarcations of the new district were various, ranging from gratitude in the central and western parts of the district¹⁶, demands in the eastern parts (Sirigu & Mirigu) for a separate and autonomous district or constituency,¹⁷ to youth protests against the location of the capital at Paga¹⁸, which called for the intervention of the former District Chief Executive (DCE) of the Kassena-Nankana District, Mr. Chegiweh Emmanuel¹⁹.

These tensions, among other factors, could partly be the reason behind the inability of the district to clearly define its boundaries and subsequently produce a district map. My attempts at getting the map drawn for the purpose of this study

¹⁶ <http://www.ghanadistricts.com/news/?read=10233> 12.10.09

¹⁷ <http://www.ghanadistricts.com/news/?read=24171> 12.10.09

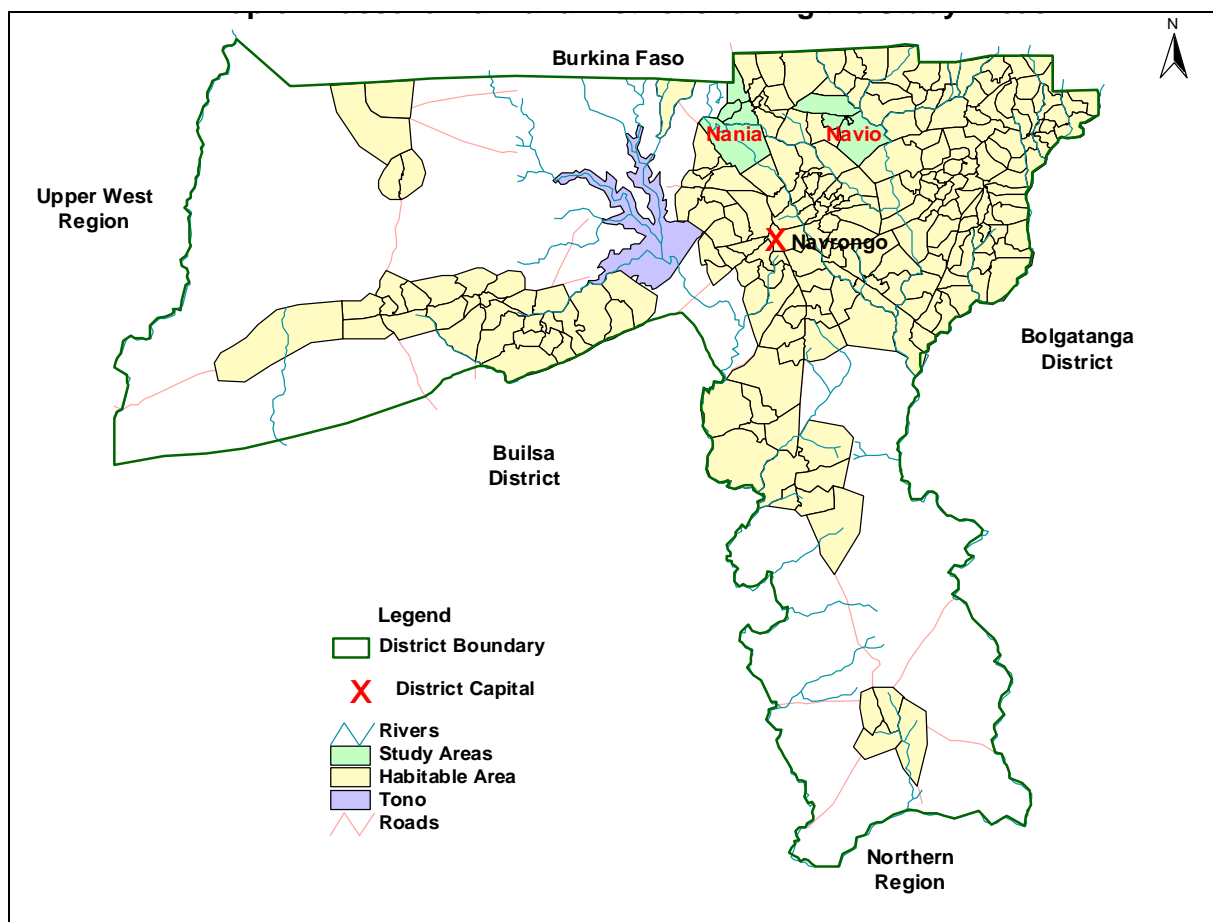
¹⁸ <http://www.ghanadistricts.com/news/?read=10017> 12.10.09

¹⁹ <http://www.ghanadistricts.com/news/?read=12236> 12.10.09

were also met by challenges of pockets of “island” communities belonging to the KND interspersed in the newly created KNW district, coupled with the difficulty of locating the precise boundaries of certain communities.

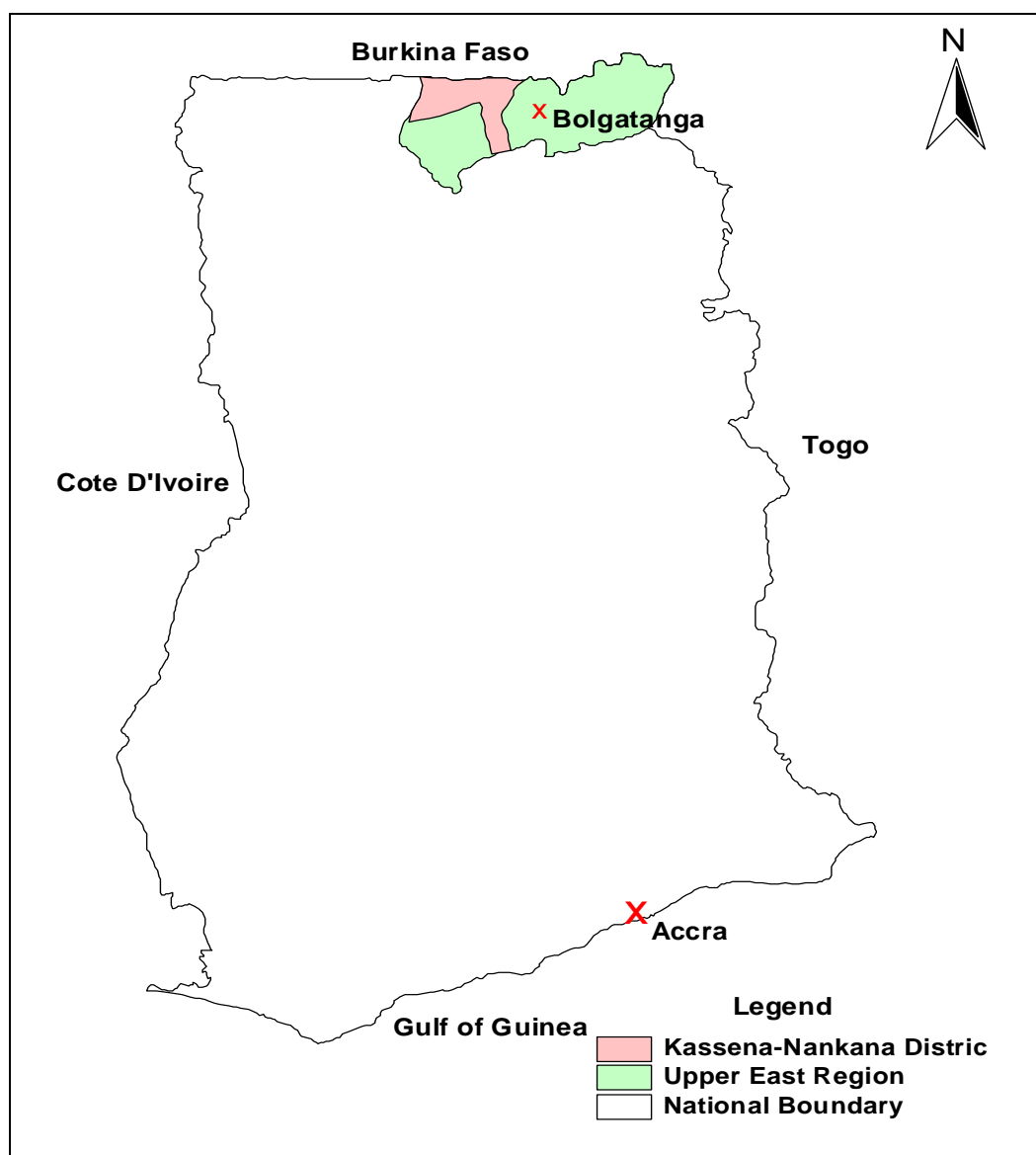
In view of these challenges, the profile, map, physical as well as other relevant characteristics of the former Kassena-Nankana District which comprised the current Kassena-Nankana District and the Kassena-Nankana West District have been used. The assumption is that besides the political elevation of the area as a substantive district, nothing else about its various features has yet significantly changed after barely one year of its existence. Below is a map of the KND depicting the study areas.

Figure 2: Map of the Kassena-Nankana District showing the study areas



Source: Achana Godwin 2009.

Figure 3 : Map of the Kassena-Nankana District in Upper East Region



Source: Achana Godwin 2009.

3.2 Profile of the former Kassena-Nankana District

3.2.1 Physical Characteristics

The Kassena-Nankana District (KND) was, as at 2007, one of the eight districts in the Upper East Region. It lies within the Guinea Savannah woodlands and falls approximately between latitude $11^{\circ} 10'$ and $10^{\circ} 31'$ North and longitude $10^{\circ} 1'$ West. The district had a total area of about 1,674 sq.km and stretched about 55

km North-South and 53 km East-West. It shared boundaries to the North with Burkina Faso, to the East with Bongo and Bolgatanga districts, West, with the Builsa and Sissala districts and in Southwest with Mamprusi district in the Northern region²⁰.

3.2.2 Climatic Conditions

The climatic conditions of the district are characterized by the dry and wet seasons, which are influenced mainly by two (2) air masses – the North-East Trade winds and the South-Westerlies (Tropical Maritime). The Harmattan airmass (North-East Trade Winds) is usually dry and dusty as it originates from the Sahara Desert. During such periods, rainfall is virtually absent due to low relative humidity. Day temperatures are high recording 42° Celsius (especially February and March) and night temperatures are as low as 18° Celsius. The District experiences the tropical maritime airmass between May and October. This is a moisture laden airmass that originates from the Atlantic Ocean and brings with it rainfall averaging about 950mm per annum.

It is only between the months of May and October that the Northern parts of Ghana come under the rainy season. That leaves November to April as dry months. This is particularly important as most of the people in this part of the country are mainly subsistence farmers who depend largely on rainfall for their agricultural produce. The recent but worrying aspect of the rainfall pattern has been its erratic nature as well as the late onset. Besides the late onset of the rains is also their reduced intensity and shorter duration. This is an important factor that contributes immensely to the poverty situation of the people in this part of the country and thus vital in shaping the decision as to the kind of intervention measure needed to enhance the livelihoods of the people in the area.

²⁰ www.kassenanankana.ghanadistricts.gov.gh Accessed 26.09.09

The District is generally low-lying with occasional undulation averaging about 1000 metres above sea level. The drainage system of the district centres mainly on the tributaries of the Sissili River – Asibelika, Afumbeli, Bukpegi and Beeyi. A tributary of the Asibelika River (Tono River) has been dammed to provide irrigation facilities, which is of great economic importance to the entire district. But with the current division, the Tono irrigation scheme now falls within the present Kassena-Nankana District only. In addition to these rivers, there are some few dugouts and ponds, which are used for livestock watering, dry season farming and domestic purposes, among which are the Paga-Nania and the Kazugu dams.

3.2.3 Vegetation

The district mainly comes under the Savannah type of vegetations; comprising open savannah with fire-swept grassland and deciduous trees. Human activities over the years have affected the original vegetation cover. This has invariably affected the soil quality which is already not well endowed for agricultural purposes. The district easily becomes waterlogged during the rainy season and dries up quickly in the dry season. Common trees of commercial value found in the district are dawadawa, baobab, sheanut and mango.

3.2.4 Accessibility

The district is physically accessible by road, air and footpaths. Besides Paga, which is linked by a first class road, the district is basically linked by feeder roads. Though these feeder roads are motorable, they need periodic maintenance to keep them effectively and efficiently functioning.

Foot and bush paths are available, linking people, beasts of burden, bicycles and motorists to settlements, farms, and market centres. There is also an airstrip at Paga where people visiting the region, via the airspace, can land.

3.2.5 Historical and Tourists Sites

The tourist resources of the district include spectacular physical and cultural landscapes such as the Paga Crocodile Pond, fetish groves, the Paga Slave Camp, Nania Slave Market etc. Others include the rock formations (Agaantanga) at Gaani, caves at Chiana, a sacred water body (Kukula) at Kayoro, the Navrongo Basilica, Achammana Shrine, Avuna shrine in Namolo and many other monuments and other tourist sites such as wildlife conservation areas at Kayoro. These are avenues that could also be developed to help generate some level of income for the people in the district.

3.3 Demographic Characteristics

3.3.1 Population

The population of the district from the 2000 Population and Housing Census is estimated to be 149,491. The figure represents 1% over the 1984 figure of 149,680. This inter censual growth rate of 1% is below the national growth rate of 2.7 %.

The sex composition of the district's population is skewed in favour of female. Females form a little over one-half of the total population of the district. The population density of the district from the 2000 Census was of 91 persons per sq. km. This is higher than the national density of 79.7 persons per sq km.

The fertility rate of the district is averagely 4.5. This can be said to be on the high side especially in rural areas such as Paga-Nania and Kazugu.

3.3.2 Age and Structure of the Population in the District

The age structure of the district follows the regional and national patterns of large population of children under 15 years and a small proportion of elderly persons

of 65 years and above. The age structure has important implications for the district in terms of its future growth, dependency burden, size and growth of the labour force.

3.3.3 Age Dependency

Dependency Ratio (DR) is defined as the ratio of the sum of the population aged below 15 years and above 64 years to the population between 15 and 64 years expressed as a percentage.

The district recorded age dependency ratio of 87.8. This means that 100 economically active persons have responsibility for approximately 88 dependents. This certainly is a dismal picture as the percentage of dependants is so high. However, the census was conducted in the dry season, a period with few opportunities available for the people to eke out a living, so most of the youth migrate to the Southern parts of the country in search of jobs that will provide them with ample income.

3.3.4 Spatial Distribution

The population density was 92 people per square kilometre. The district consists of 326 communities – majority of which is rural, only 13 percent of the population lives in towns. At least three out of four people living in the district reside in the rural area. This is very significant in terms of the implementation of strategies to reduce poverty in the district.

3.3.5 Migration

Migration (i.e.out of the district) is mainly seasonal but more pronounced in the dry season (between the months of October and May). The youth (10-34 years) is the majority that migrates to the southern parts of the country in search of greener pastures. Most of them return home in the rainy season to commence farming activities while others continue to hustle with great ambitions. This

partly explains why the district recorded a tremendously low population growth rate of 0.1% in the year 2000, according to the Population and Housing Census conducted in March 2000.

3.3.6 Occupational Distribution

The mainstay of the local economy is agriculture, which accounts for about 68.7 percent of the employable population. Public servants, traders, food processors and small-scale artisans constitute the remaining 31.3 percent. The district has virtually no sizeable manufacturing industry. Farming activities as indicated earlier are mainly rain-fed. However, irrigation facilities at Tono Irrigation project areas, smaller dams/dugouts and some other water bodies serve as additional sources of water for dry season farming in the various communities in which they are located.

Although crop farming is the highest contributor to agricultural development, in practice, the people in the district integrate the other non-cropping activities such as fishing, hunting, animal husbandry and poultry keeping with their cropping activities. These non-cropping activities in the various communities are also significant for poverty reduction programmes as they imply a certain degree of livelihood diversification. It was revealed in the study communities that these activities, which are perceived by these people as part and parcel of their livelihoods, provided some income for the irrigation farming.

3.4 Human Resource Development

3.4.1 Education

Education is the basic means by which the human resource base of any community or nation can be developed. So it is seen as a necessary step if the development of the district is to be sustained over the long term. But, the majority of the people especially in the KNWD have had no formal education.

This is a major setback for development purposes and this was clearly demonstrated in certain cases during the course of the fieldwork in the communities concerned. Though the level of education is generally low in the district, the case becomes very dismal when one inches into the rural areas as in the case of this study.

The KNW district in general is lagging behind in terms of education, and the variations that also existed within the district were further skewed against the rural areas. This was evident in the study sample. See the table below.

Table 3: Educational Status of Respondents

Community	Educational Level				Total
	Basic	Second Cycle	Tertiary	None	
Nania	26 (32.5%)	12 (15%)	0 (0%)	42 (52.5%)	80 (100%)
Kazugu	9 (22.5%)	1 (2.5%)	1 (2.5%)	29 (72.5%)	40 (100%)
Total	35 (29.2%)	13 (10.8%)	1 (.8%)	71 (59.2)	120 (100%)

Source: Field Survey, July 2009

3.4.2 Health Care

Health care in the district is oriented basically towards prevention of diseases and the promotion of healthy lifestyles. It is a decentralized system and community based as it seeks to bring quality health care closer to the people.

There is a District Mutual Health Insurance Scheme (DMHIS) aimed at improving the health care delivery system and widen access to those services to the people. But enrolling people into the scheme has not been that smooth as the payment of the premium, though seemingly negligible, still posed problems for most of those in need of it, a pointer to the poverty situation in the district.

3.4.3 The Political Landscape

Ghana, like most democracies in the world has a decentralised system of government where there is the devolution of power from the centre to the local level through various departments. Ghana operates the District Assembly system, which aims at bringing decision making closer to the people in what is termed as the grassroot level of participation in national politics.

The Sector Ministries at the National level, delegate power to the Regional level where the President's representative is the Regional Minister. He or she basically plays a coordinating role in all the decentralised units in the region within his or her jurisdiction. But the onus of the smooth and effective operation of the decentralised system of governance falls within the remit of the Ministry of Local Government and Rural Development. Its mission statement is that "The Ministry of Local Government and Rural Development exists to promote the establishment and development of a vibrant and well-resourced decentralised system of local government for the people of Ghana to ensure good governance and balanced rural based development"²¹.

In furtherance of this devolution of power, Act 241, subsection 3 states that "Subject to this Constitution, a District Assembly shall be the highest political authority in the district, and shall have deliberative, legislative and executive powers"²². It appears that power is devolved from the national level only to be centralised at the district level. But can it be held that the District Assemblies actually wield the sort of power ascribed to them by the Act 241 of the 1992 Constitution? That apart, the District Assembly constitutes the development hub of the district because it has been explicitly charged by Act 241 with the responsibility of formulating and implementing development plans, programmes

²¹ http://www.ghana.gov.gh/index.php?option=com_content&view=category&layout=blog&id=74&Itemid=224
Accessed 11.11.09

²² http://www.ghanadistricts.com/home/?_id=13&sa=5109&ssa=873 Accessed 11.11.09

and projects. This was partly the reason for which the Kassena-Nankana West District was established to facilitate the development of the area.

Though the District Assembly is the highest governing body, it has to collaborate with the various decentralised departments in the district to foster good governance. In the course of this study, however, it was discovered that the relationship between the Assembly and most of the decentralised departments was largely non-existent as the departments in question were strongly oriented either towards their regional or national sector heads. This was the case for the former Kassena-Nankana District under whose ambit the irrigation schemes at Paga-Nania and Kazugu were constructed. But the story was no different at the time of this study. In fact, this kind of relationship was not only limited to the District level but manifested itself in some decision making by some sector ministries from the national level as was revealed by the Upper East Regional Minister. This poor relationship did cause untold damage to development projects in the district and the region as a whole. Also, access to information on the development projects in the district was difficult due to the poor communication between the departments and the District Assembly (DA).

The implication of the above scenario concerning this relationship was that effective government was yet to reach the grassroot level in the district as the sub-structures were not functioning efficiently. Access to information on governmental issues as well as livelihood services by the majority of the people in the district was deficient.

With the KNWD's lack of basic information concerning its area of jurisdiction, one had to move to and fro between the two districts-KND & KNWD in search of information on the development projects. Though this situation seems extraordinary, it was the reality in the KNWD, and thus created the political space within which the communities together with the various development agencies had to work for the improvement of livelihoods in that district.

4. CONTRIBUTIONS OF THE SCHEMES

4.1 The Paga-Nania and Kazugu Schemes

Chapters one and three identified some of the constraints of the KNWD. Some of these included the low level of education, the dependence on agriculture though the area has poor and shallow soils besides the fact that the agricultural production is mostly rainfed. The vegetation is mostly of the savannah type which is constantly under the threat of fire during the dry months.

Accessibility in the district was also very poor. The district is yet very young with little infrastructure in certain areas and none at all in others. There is a commercial centre located at the district capital-Paga where the people from in and around the district meet every three days' interval to exchange goods and services.

Chapter two looked at the multiplicity of the theories of poverty that could best explain the poverty situation in the KNWD. It was seen that some of these theories on poverty were more relevant in the district than others. Based on interactions with the people coupled with observations in the KNWD, I argue that the poverty situation is mainly caused by the political-economic structure in the district as well as the country as a whole, which is a colonial legacy. In addition, the geographic disparities in resource endowment in the region as a whole and the district in particular and the cumulative and cyclical interdependencies in the district contribute in no small measure to the poverty in the district.

An effective poverty reduction strategy that will meet its intended goals and the challenges in the KNWD would have to be holistic and multisectoral. This means, it must not be targeted at only one aspect of poverty such as lack of capital, lack of education or unemployment etc.

The selected intervention by the government of Ghana through the combined efforts of MoFA and the International Fund for Agricultural Development (IFAD) was the rehabilitation and construction of dams designed to provide water to rural communities for irrigation, domestic and livestock watering in a sustainable manner. This aimed at increasing agricultural production in order to reduce rural poverty in the Upper East Region.

This saw the rehabilitation of the Paga-Nania dam in 1994 with an irrigable area of 12 hectares (ha)²³ while the Kazugu dam with 6 hectares (ha)²⁴, was constructed in 1998. With the introduction of these schemes, the expectation has been that the usual food shortages in the dry season which is a major characteristic of these areas would be a thing of the past. Farmers' household income levels were expected to increase and ancillary jobs would also be created for the people in the district away from the farms. The over all effect would be the reduction in the poverty levels in these communities.

However, the existence of these schemes is not a guarantee that the expected benefits would automatically result. Mediating factors like the capability of the people to utilise the schemes properly, backed by the availability of technical, financial and general institutional and organisational support among others would play a major role in ensuring that the schemes bring about the necessary improvement in the lives of the local people. This partly constitutes the challenge for this study as I discuss below.

²³ Irrigation Development Authority: Pertinent Data on the LACOSREP Phase I Dams in Upper East Region

²⁴ KNWD MoFA Office: Field Notes

4.2 The Economic Status of the people before and after the introduction of the Schemes

Attempts at establishing the economic status of the people in a place like KNWD was not that easy as most people were small scale farmers. Additionally, getting people to declare their income status has always been difficult and especially in rural settings in Ghana where modesty is held in high pedestal. This means the figures provided here are to be treated with caution. But that notwithstanding, the figures are not to be wholly discounted because they serve as guidelines to the conditions that existed in the respective communities.

For those who could not give estimates of their monthly incomes and expenditures before the schemes were introduced, attempts were made to convert the sale of the items that these people could remember within the period in question to arrive at possible figures that also served more as a guide in that regard. The table below presents the estimated monthly income of the study communities in the KNWD before the introduction of the schemes.

Table 4: Estimated Monthly Income before the Irrigation Schemes

Community	Amount				Total
	Ghc 1-10	Ghc 11-20	Ghc 21+	Not Known (NK)	
Nania	33 (41 %)	14 (17%)	7 (9%)	26 (33%)	80 (100%)
Kazugu	29 (72%)	1 (2%)	1 (3%)	9 (23%)	40 (100%)
Total	62 (52%)	15 (13%)	8 (7%)	35 (29%)	120 (100%)

Source: Field Survey, July 2009.

From the table above, it can be seen that before the introduction of the Paga-Nania irrigation scheme, 41% of the farmers reported an estimated monthly income of less than Ghc10²⁵ (less than US\$ 7), while 17% reportedly had an

²⁵ Due to the fact that it covered a period, it was difficult to establish the exchange rate for the estimated income but at the time of the interview the Inter-Bank Exchange Rate was Ghc 1.45 to the US Dollar as at 15.07.09, courtesy of Barclays Bank. Though it could not be used as an appropriate gauge on the standard of living, the general opinion was one of inadequate household income level for that period.

estimated monthly income of between Ghc11 to 20 (i.e between US\$ 7 to 14). A further 33% of the farmers could not remember their monthly income before the introduction of the scheme in Nania. However, I am of the opinion that these people did not want to declare their income status rather than actually not being able to remember though such a possibility cannot be altogether ruled out. About 9% of the farmers reported an estimated monthly income of above US\$ 14 (Ghc 21+). In essence, these figures show that majority of the people in this community had a monthly estimated income of less than a dollar a day.

At Kazugu, 72% reported an estimated monthly income of less than US \$7. While 23% could not remember their estimated monthly income. About 3% had an estimated monthly income of Ghc 21+.

With regard to the estimated monthly expenditure in these communities, the story was no different. The table below presents the estimated monthly expenditure of the two communities in the KNWD before the introduction of the schemes.

Table 5: Estimated Monthly Expenditure before the irrigation schemes

Community	Amount				Total
	Ghc 1-10	Ghc 11-20	Ghc 21+	Not Known (NK)	
Nania	34 (42%)	19 (24%)	12 (16%)	15 (18%)	80 (100%)
Kazugu	23 (57%)	7 (17%)	1 (3%)	9 (23%)	40 (100%)
Total	57 (48%)	26 (22%)	13 (11%)	24 (20%)	120 (100%)

Source: Field Survey, July 2009

At Paga-Nania, 42% spent less than Ghc10 (less than US\$ 7). Comparing this to the estimated monthly income in the same category, which was 41%, it can be said that 1% had a monthly expenditure that exceeded their monthly income. This implies that these people were indebted, a situation that is not unusual. In addition, 24% spent between Ghc11 to Ghc20 (between US\$ 7 to 14) monthly before the introduction of the schemes. A 7% increase in expenditure more than

the 17% of the farmers with a monthly estimated income level within that same category. This also shows that this extra 7% in expenditure had to come from somewhere. Undoubtedly that 7% was also in debt monthly at that time. A further 18% could not remember their monthly expenditure pattern, less than the 33% who could not remember their estimated monthly income during that same period. A drop of almost half (15%) the percentage points further corroborating the fact that most of the people who claimed not to remember their monthly income were not willing to declare for reasons known to them. Those with an expenditure of more than US\$ 14 were 16%. This indicated more people in this category spent more than they earned monthly.

At Kazugu, 57% spent less than Ghc10 (less than US\$ 7), as against 72% who had estimated income level within that category. This indicated either a level of caution in terms of expenditure or the absence of credit facilities for most of the people in this community. There was a 17% who spent between Ghc11 to Ghc20, meaning, most of the people in this income category spent far more than they earned. This yet again was a sign of indebtedness. An additional 23% could not remember their estimated monthly expenditure which incidentally coincided with the number that could not remember their monthly estimated income. A 3% had their expenditure above Ghc 20 (above US\$ 14).

The trend observed here was a general pattern of communities with expenditure above that of income in almost all the income categories. Though this was not a unique situation, it was a probable sign of an unsustainable livelihood and an indication of a people who stood in need of a complementary source of livelihood. Besides, debts had to be serviced as a sign of one's credit worthiness.

This pattern in both communities was expected to change with the introduction of the schemes, with income and expenditure patterns increasing in relation to increased productivity at the schemes. Though irrigation alone could not be a

solution to poverty in the communities, it is an important element in poverty reduction.

With the above expectations, how did the people fare after the introduction of the irrigation schemes? The table below presents the estimated monthly income of farmers after the irrigation schemes were introduced in the various communities.

Table 6: Estimated Monthly Income now with the Irrigation Schemes

Community	Amount			Total
	Ghc 1-10	Ghc 11-20	Ghc 21+	
Paga- Nania	8 (10%)	20 (25%)	51 (65%)	79 (100%)
Kazugu	0	18 (45%)	22 (55%)	40 (100%)
Total	8 (7%)	38 (32%)	71 (59.7%)	119 (100%)

Source: Field Survey, July 2009.

As seen in the table above, 10% of the farmers in Paga-Nania reported an estimated monthly income level of less than Ghc10 (less than US\$ 7). A great number had increased their income in this category. So from the 41% of farmers whose income was at that level, its now just 10%. The same applied to the other income categories but those with an income level of Ghc21+ at this time constituted 65%. This income level saw more improvement according to the figures above. Before the introduction of the schemes, only 9% of the farmers had their estimated monthly income in that same category. Considering the statistics therefore, the level of farmer household income had increased remarkably with the introduction of the schemes. There was one missing value (no response) in relation to this question, which was not added for analysis.

At Kazugu, no farmer reported an estimated monthly income level of less than Ghc10 (less than US\$ 7) after the introduction of the scheme in that community. This was a significant improvement over the 72% in that category before this period. Those who reported an estimated monthly income level of between Ghc11 to 20 constituted a 45%, an increase from the previous 2% before the

introduction of the irrigation scheme. A 55% of the farmers in this community at this time reported an estimated monthly income level of above Ghc21 (above US\$14). This was yet another notable increase over the previous 3% before the introduction of the irrigation scheme.

With the increase in income levels after the introduction of the schemes, there was also an observed increase in the expenditure patterns as presented in the table below.

Table 7: Estimated Monthly Expenditure now with the Irrigation Schemes

Community	Amount			Total
	Ghc 1-10	Ghc 11-20	Ghc 21+	
Paga- Nania	7 (9%)	21 (26%)	52 (65%)	80 (100%)
Kazugu	0	20 (50%)	20 (50%)	40 (100%)
Total	7 (6%)	41 (34%)	72 (60%)	120 (100%)

Source: Field Survey, July 2009.

At Paga-Nania, 9% at this time spent less than Ghc10 a month. This was a drop from the 42% in that same category before the introduction of the schemes. For those in Ghc11 to 20 category at this time was 26% indicating an increase from the 24% in that same category before the introduction of the scheme. Those who spent above Ghc21 (above US\$ 14) monthly constituted 65%. Yet again, an increase from the 16% in that same category before the introduction of the schemes. The observed trend from the above figures provided a positive correlation between income and expenditure such that an increase in income corresponded to an increase in expenditure with fewer people now trapped in debt in the Paga-Nania community during this period.

At Kazugu, none of the farmers reported an estimated monthly expenditure of less than Ghc10. A dramatic decrease from the 57% in that category before the irrigation scheme. In the category of between Ghc11 to 20, 50% reported an

estimated monthly expenditure of that range, yet another remarkable increase from the previous 17% in that same category before the introduction of the scheme. The remaining 50% reported an estimated monthly expenditure of above Ghc21 at this time as against 3% in that same category before the introduction of the scheme. The trend in this community also shows a relative increase in expenditure as income levels increased as was the case at Paga-Nania. However, what difference did these figures really make to the lives of the people in the respective communities?

4.3 Perceptions of the people in the KNWD on the contributions of the schemes to their livelihoods.

How the communities themselves view the schemes is essential in assessing their impact. The statistics collected paint a general picture of success but how did that impact on the lives of the people? It is difficult to attribute improvement in the lives of the people solely to the irrigation schemes due to the complexity of the causal factors of poverty as well as the diversified sources of livelihoods.

In assessing the impact of the schemes in the lives of these farmers, besides the income measures above, the motivation as well as the length of time the people engaged in the farming was sought. This was to serve as a guide as to the benefits drawn and the views held by the farmers with regard to the schemes. Below is a table presenting some of the basic reasons for getting into the irrigation farming.

Table 8: Reasons for engaging in irrigation farming

Community	Reasons for irrigation farming			Total
	Part-Time	Basic Occupation	Source of Income	
Paga-Nania	1 (1%)	12 (15%)	67 (84%)	80 (100%)
Kazugu	0	16 (40%)	24 (60%)	40 (100%)
Total	1 (8%)	28 (23%)	91 (76%)	120 (100%)

Source: Field Survey, July 2009.

From the table above, 15% of the farmers at Paga-Nania indicated the farming was their basic occupation while 84% stated it was a source of income to them. A majority of the farmers in this community reported being into the farming for at least the past ten years. This served as a considerable time frame enough for them to ascertain the extent to which the farming was either helpful to them or not.

At Kazugu, none of the respondents reported the farming as a part-time occupation. This indicated the absence of other significant livelihood pathways in the community. Forty 40% percent noted that it was their basic occupation while the remaining 60% indicated that it was a source of income to their families. Almost all the farmers in this community, 39 reported engaging into the irrigation up to ten years. However, some of the people in this community were into irrigation farming well before the period in question.

The yields of the farms in the respective schemes were also assessed. The table below presents the results.

Table 9: State of yields of crops

Community	State of yields			Total
	Good	Bad	Average	
Paga-Nania	38 (48%)	9 (11%)	33 (41%)	80 (100%)
Kazugu	35 (88)	4 (10%)	1 (2%)	40 (100%)
Total	73 (61%)	13 (11%)	34 (28%)	120 (100%)

Source: Field Survey, July 2009.

In the table above, 48% of the farmers at Nania indicated that the yield was good and 11% indicated it was bad while 41% reported that their yields could be described as average. The 11% who reported their yields as bad in this case, indicated they did not consider the irrigation at this scheme to be worth their efforts but for some reasons, they had to be involved in it. This feeling was also

made known during the FGD session in this community, when some farmers stated that they had to engage themselves in the irrigation farming because there was no other option for them.

On the other hand, at Kazugu, 88% of the farmers said their yields were good, 10% reported it was bad while the remaining 2% noted it was average. Good yield to these communities as they described it, meant the kind of yield that afforded them the ability to recoup their investment and have enough for the household consumption. Recouping their investment did not only depend on the yield but on the market prices offered if ever there were buyers.

At the various schemes, the dominant crops cultivated were tomatoes and pepper, mainly for their commercial value. The other crops added were basically meant for domestic consumption and included onions, okro and some leafy vegetables like kenaf and hibiscus.

Regarding the benefits drawn from the schemes, 93% of the farmers at Paga-Nania said they derived their household income from the farms as well as their domestic food needs besides the income used to purchase what they did not produce and to attend to other family needs. A further 3% indicated that the farming was not helpful to them because they were not able to derive any benefits from it. The remaining 4% said it afforded them the opportunity to make friends as well as provided their domestic food needs.

On the issue of the level of dependence on the irrigation schemes and also to ascertain the level of diversification of livelihood activities, additional income generation activities came under the searchlight. A majority of the farmers making up 60% at Paga-Nania scheme reportedly had no other major activity besides the farming. A further 28% engaged in petty trading besides the farming. It is worthy to note that it can hardly be held that people in the rural areas could be stuck to a single livelihood pathway as livelihood diversification is the norm

in such communities rather than the exception if even the people themselves do not mention it. Some activities like the raising of fowls, which also generates some level of income in times of need to the farmer, were mostly not regarded by these people as income generation activities but more as a way of life.

At Kazugu, 100% of the farmers indicated the irrigation farming served as their major source of household income as well as their domestic food source. And in assessing other income generation activities besides the irrigation, 53% of the farmers also engaged in petty trading. However, it was indicated in the FGD that the trading had not been that helpful but that it was at least something to do. It was revealed that prior to the onset of the irrigation scheme most of them were engaged in the petty trading and had been offered some loans from the Micro-Finance and Small Loans Centre (MASLOC), a Micro-Finance organisation set up under the auspices of the government of Ghana. At Kazugu, MASLOC advanced loans to womens' groups, and it could be recalled that a majority of the irrigation farmers in this community were women.

The loans given by MASLOC were channelled into the farming which was regarded as a better way of investment than the trading. This meant there were some income generating activities pursued in the Kazugu community but due to the relatively low returns and the likelihood of loss of the income, most preferred putting their money into the farming. The income accruing to the farmers after the introduction of the schemes indicated some level of gains. Below is a table of the income generation activities in the two communities besides the irrigation farming.

Table 10: Other income generating activities in the two communities

Community	Type of activity				Total
	Trading	Animal Husbandry	Nothing	Civil Service	
Nania	22 (28%)	9 (11%)	48 (60%)	1 (1%)	80 (100%)
Kazugu	21 (53%)	3 (8%)	15 (37%)	1 (2%)	40 (100%)
Total	43 (36%)	12 (10%)	63 (53%)	2 (1%)	120 (100%)

Source: Field Survey, July 2009

4.4 Can it be held that the irrigation farming has contributed to the improvement of the status of farmers, and to what extent?

There was an overwhelming positive response to this question. For instance, at Paga-Nania, 95% of the farmers said it was helpful to them in various ways. With regard to Kazugu, 100% (40) of the farmers indicated it was helpful and the best thing to have happened in their community.

However, improvement of their status in terms of general well-being, increased income, access to education, health etc depend on several factors. And for the farmers, besides the generation of income, vegetables for domestic consumption, water for animals and other domestic purposes, some did mention their ability to either marry or dowry their wives. To them, the benefits of the scheme were immense, as a community member in Kazugu remarked during the FGD that *“ooh, the benefits of this dam to us are overwhelming, we cannot mention all”*²⁶. This, however, did not mean the irrigation schemes were solely responsible for the improvements in the lives of the people as they claimed. This was because of the diversified livelihood activities in these rural communities. Below is a table presenting the above information.

²⁶ FGD Session at Kazugu: 04.07.09

Table 11: Improvement of Status

Community	Improvement of status		Total
	Yes	No	
Nania	76 (95%)	4 (5%)	80 (100%)
Kazugu	40 (100%)	0	40 (100%)
Total	116 (97%)	4 (3%)	120 (100%)

Source: Field Survey, July 09

To isolate the contribution of the irrigation schemes to the household income of the farmers, additional sources of income like pension, and remittances were sought. The general picture presented was that of dependence on the irrigation schemes by the people as 79% of the farmers out of the total of 120 interviewed did not have any other major external source of income. And for those who got some financial support from relations outside the district, the amounts received depended on their perceived needs for those moments.

Some Farmers were also able to save some of their earnings by purchasing animals for rearing and other personal as well as household items after the harvesting and sale of their produce. Some of these items could be resold for cash in times of need. This form of savings was prevalent in both communities with regard to those who indicated they were able to save some of their earnings.

Table 12: Farmers' ability to save

Community	Ability to save			Total
	Yes	No	Sometimes	
Paga-Nania	60 (75%)	19 (24%)	1 (1%)	80 (100%)
Kazugu	22 (55%)	18 (45%)	0	40 (100%)
Total	82 (68%)	37 (318%)	.8%	120 (100%)

Source: Field Survey, July 09

As seen in the table above, 75% of the farmers at Paga-Nania reported their ability to save some of their earnings while 24% noted they could not save.

At Kazugu, 55% of the farmers reported their ability to save some income in the form of animals purchased for rearing while 45% said they could not save anything. This was not surprising as this community was less privileged than that of Paga-Nania in terms of marketing their produce as well as the availability of other livelihood opportunities that would complement the irrigation farming.

For this first part, consideration has been given to the extent to which the people of the KNWD perceived the contributions made by the irrigation schemes. The benefits drawn by the farmers from the schemes have also been in focus in this part. It was observed that a majority of the people depended on the irrigation schemes for their source of livelihood as the rainy season farming was no longer beneficial. The schemes provided them with their badly needed household income as well as vegetables for domestic consumption. As the household income of farmers increased, so did the level of household expenditure as well.

Farmers were also able to save some of their earnings, which was evident in the form of investments in animals and to an extent the purchase of household and personal effects. According to the people, these schemes were a success as the contributions, as stated by the farmers, were very significant to them.

4.5 Operations and management options of the schemes and their effects on the livelihoods of the people of the KNWD

This section deals with the respective roles of the people as well as the government and other related agencies and institutions relevant to the success of the schemes. For the schemes to achieve their goal of reducing poverty, several factors had to be considered. The efficacy in implementing the intervention measure was vital to the success of the schemes. In addition, the projects and

challenges, regarding how these intervention measures actually empower the people, and their long term viability are also important in assessing the successes and failures of the schemes.

A question regarding the ownership of the schemes was put first to the individual farmers and later to the community members at the FGD session. This was to help assess the attitude of the people to the scheme in general. The assumption was that if the schemes were seen to be the property of an external agency-like government, the likelihood of a collective responsibility towards their maintenance would be minimal if available at all. If on the other hand there was the sense of community ownership, then it could be relatively easier to maintain and operate the schemes responsibly, though not a guarantee, as additional factors like the skills and capacity to operate and manage among others are relevant.

Table 13: Ownership of Schemes

Community	Ownership of Schemes			Total
	Community	Government	Joint ownership	
Paga-Nania	61 (76%)	1 (1%)	18 (23%)	80 (100%)
Kazugu	23 (58%)	2 (5%)	15 (37%)	40 (100%)
Total	84 (70%)	3 (2.5%)	33 (27.5%)	120 (100%)

Source: Field Survey, July 09

At Paga-Nania, 76% of the farmers interviewed indicated that they understood the scheme to be owned by the community though they acknowledged the role of the government and her development partners for greatly contributing to the construction of the scheme. A further 23% said they saw the schemes to be jointly owned by both the community and the government. Their reason also being the role played by the government towards the construction of the scheme, which invariably made government a partner to the scheme. It is a fact that these

people like any other rural folks in Ghana saw any external development agency to be an arm of the government once the capacity of the agency went beyond that of an individual personal intervention in their perspective.

For Kazugu, 58% of the farmers indicated the scheme belonged to the community while 37% thought it was jointly owned. Only a handful said it was a government project. The divided opinions regarding the ownership of the schemes was not surprising due to the assistance offered to the communities by the government through the MoFA in the construction of the schemes.

However, indicating that the scheme was jointly owned, besides the reason given as the role government played in their construction, could also be due to some ignorance. This could be the case if there was no sufficient education from MoFA before and after the construction of the schemes. The availability of the human capital, of which education is an intrinsic component is vital in the successful implementation of any poverty intervention measure. So, to elicit the collective consciousness in the operation of such schemes that were meant to be controlled by the people themselves, it was important that adequate education be given. But for now, seeing the schemes to be jointly owned was good enough a sign that these farmers were aware that they had a role to play in the maintenance of the schemes.

During the FGDs in both communities, however, it was unanimously held that the schemes were community owned. This was important in bringing out the community spirit in the maintenance of the schemes which would ensure their long term viability. There is however, the need for caution here as this consensus could have several motivations, ranging from moving along with the crowd at Nania to the fear of being held for lack of gratitude at Kazugu as the chief, who initiated the project, was in fact part of the FGD in that community, a situation that was likely to have influenced the views of most of the people during that particular discussion.

Land acquisition at the irrigation sites were different for both schemes. This reflected the origins of the respective schemes. The Paga-Nania scheme, had as part of the preconditions for the construction of the project, for the community to lease the lands within the catchment area of the scheme to the district assembly. Two elders and the assembly person for the community represented the people in signing the agreement with the KNDA as indicated in a letter from the district office of MoFA to the Ag. IFAD Project Co-ordinator dated 10.04.2001.²⁷

The land was however, leased to the district assembly without the payment of compensation, an arrangement that was also part of the agreement. This meant the district assembly was to hold the land in trust for use by the WUA. But as seen in this community, the lack of compensation did not motivate the landlords to stick to the terms of reference in the agreement. However, the WUA was to constitute a Lands' Allocation Committee (LAC), to ensure that the plots at the irrigation site were fairly distributed to all community members who met the criteria evolved by the WUA for that purpose.

But this agreement had been arbitrarily set aside by some of the landlords at Nania. Incidentally, the Secretary to the WUA in this community who was the only literate person on the executive board, was also a landlord. He allegedly allocated the choicest of plots to his cronies and reserved a lion's share to himself closer to the upper reaches of the canal making him one of the first to receive water from the reservoir. This angered most farmers and generated some tension that was felt during the FGD session in that community.

This attitude of the landlords was not too surprising considering the kind of agreement that was reached without corresponding modalities regarding its enforcement. This was a failure on the part of government in drafting such an agreement that instead of facilitating the operation of the scheme rather impeded

²⁷ MoFA District Office, Navrongo: Legal Acquisition of Phase I Dam Sites- Submission of signed documents-KND

it. The worse aspect of the agreement was the lack of any mechanism to rectify the unintended consequences as seen above, though the government was well aware of the complexities of the land tenure system in the Northern Sector and the country as a whole.

So, at Paga-Nania 50% of the farmers reported that their plots were allotted to them by the landlords while 34% constituted a group that owned the plots on which they cultivated their crops. This group termed their plots as “family plots”. Only 16% of the farmers interviewed claimed to have received their plot allocation from the LAC. Regarding the agreement signed with the government, this last group was supposed to be the majority if the terms of reference were to be respected. But as the situation stands, that is far from the expectations of the government when the deal was signed.

Allegations were that the 50% of the farmers who received the plots from the landlords had some kind of relationship with the landlords. Most of these people could hardly be described as poor but, incidentally, denied the poor and especially the women the opportunity to obtain plots for cultivation. This arrangement with the land, which also relates to access to water for the crops was partly to blame for the despair by some farmers at the Nania scheme.

At Kazugu, the situation was different as the land was controlled by the community through the respective landlords. So 80% of the farmers got their plots from the landlords with the remaining 20% using the family land. Regarding access to land at the irrigation site, the Kazugu arrangement was quite promising as the landlords agreed to allocate a larger chunk of the land to women who most of the times bore the brunt of poverty in the rural areas. This was without any government intervention but the community itself had a free hand to decide how the scheme was to be managed. The case of offering land, predominantly to relations was absent in this community.

So, unlike Paga-Nania where most women within the irrigation scheme either did not have access to plots or got plots that were at the tail end of the canal making it difficult for them to obtain enough water for their crops, the majority of the farmers at Kazugu were women who got their plots with relative ease. Though the arrangement here could be lauded in comparison to the Nania scheme, the sizes of the plots were regarded to be small by most of the male farmers who mostly cultivate their crops at the riverside. This aspect possibly partly accounted for their goodwill towards the women at the irrigation site.

Sizes of plots in general at both schemes did not vary much among the farmers, though exceptions to this existed at the Nania scheme. Both communities indicated that the government played no role in the daily operations of the schemes, a situation that was to be expected as the schemes were to be community-owned, and managed by the WUA, in each community. But were the communities adequately prepared to take up such challenges? Considering the challenges in accessing land and water, the efficacy of this management by the communities, especially at Paga-Nania is questionable.

In terms of access to credit facilities, another essential part of enhancing production, farmers at Paga-Nania indicated such an opportunity existed at the Paga Rural Bank for them. They however, intimated that it was becoming difficult to access with the passage of time due to the increasing number of defaulters which, they claimed was tied to the poor marketing conditions for their produce among other issues including the alleged misappropriation of funds by some of the WUA executives resulting in the insolvency of the association as a whole.

At Kazugu, the farmers reported the absence of such a facility for them. This was not surprising as the farmers were not even organised into any group and had no group account, conditions that needed to be met before they could access credit facilities. It was however, noted that some of the women received loans from

MASLOC to help them in their income generation activities like petty trading. Those women who got into farming, ploughed their loans into the purchase of fertilizers, chemicals and pesticides for their crops.

The issue of repayment of these loans was noted to be a source of worry to the beneficiaries as it depended on a host of factors like the yields and market for their produce among others. This aspect meant that if even an institution would advance loans to these farmers, there must be the assurance that the monies could be repayed. An issue that was likely to reduce the chances of the people in this community from accessing loans.

In terms of technical support services, the differences again manifested markedly between these two communities. Whereas farmers at the Paga-Nania scheme reported receiving some technical support from MoFA officials and were even familiar with their area Technical Officer (TO), it was not the case at Kazugu where the farmers emphatically indicated there was no occasion on which they got the services of a TO from MoFA. They never even knew the scheme was assigned one.

Interacting with the district director of MoFA for the KNWD, he revealed there was an officer assigned to the community but for reasons he characterised as logistical constraints as well as ill-health, outreach services were limited. Efforts to meet the said officer assigned to Kazugu proved futile as he was reported sick for the period within which the study took place. There was however, no known replacement for him for the period of his absence during the course of this study.

In terms of access to adequate water throughout the farming season, 40% of the farmers at Paga-Nania reported that there was no adequate supply. Observations however, coupled with the FGD, revealed that it was not a case of actual lack of water in the dam but the way and manner in which it was distributed. In addition, there were some activities that sabotaged its availability to those at the tail end of

the canal. For instance, some group of farmers were given water pump by MoFA to experiment dry season maize farming. This saw huge tracks of land brought into cultivation which were not considered by the IDA when the dam was being designed.

These farms were however, irrigated using water from the canal instead of directly from the dam with the help of the pumping machines. The process thus reduced the water level as well as its rate of flow in the canal, leaving those farms at the tail end of the canal without water for days. This meant the water shortages reported at this scheme were basically artificially created. This was an added issue to the alleged financial malfeasance by some of the WUA leadership that generated some dissatisfaction and a general apathy among the affected farmers at the scheme.

For Kazugu, 10% reported the water was not adequate. This was observed to be related to the size of the dam in relation to the number of farmers actually using the water. That apart, the canals lacked the necessary concrete surfacing, a situation which enhanced water seepage and excessive leakages resulting in a lot of waste before the water could get into the plots, especially at the tail end of the canal. The use of water pumps at this scheme was also observed and there seemed to have been a tacit agreement among farmers that lifting water in this manner from the dam was an integral part of the scheme. However, this meant the actual command area for the dam also exceeded the designed command area, a situation which had implications for the availability of water throughout the farming season.

To further worsen the case, a good number of people at Kazugu established rice farms on the water course or the catchment area of the dam. These activities made much of the soil within that area very loose, and predisposing it to erosion. Rain water transported heavy amounts of this material into the dam causing it to silt and shrink faster than expected. During the period of this study, one of the

pressing needs of the community was for the government to assist them in desilting the dam, which was constructed barely ten years ago. Interestingly, however, there was no indication that any serious thought had been given to the causes of the relatively quick silting of the dam as farms were still seen to be established on the catchment area. Also, responding to what they could do to ensure the long term viability of the dam during the FGD, halting farming activities within the water course did not feature as part of their efforts in that regard.

The challenges to the irrigation farming were frequently mentioned both during the personal interviews as well as at the FGD sessions. Among the most pressing challenges to the people at both schemes were the high cost of fertilizer and pesticides, and the absence of credit facilities. Lack of market for the produce resulting in farmers being cheated by the ‘market queens,’²⁸ and the absence of improved seeds. Others included alleged high income taxes imposed by the district assembly, lack of fence materials for the farms as well as occasional water shortages.

As to what they could do as communities, to solve those challenges, there was a general feeling of helplessness by the people to most of these issues raised. Though the communities acknowledged the usefulness of the schemes to their livelihoods in general, it was mainly the maintenance and purported protection of the water bodies that were considered to be within their capability. The rest of the issues accordingly required an external intervention. For instance, there was the expectation that the government should subsidise the prices of fertilizer and pesticides, make improved seeds available, create an assured market for them, provide credit facilities, desilt or rehabilitate the dams and provide them with fence material.

²⁸ Women who come from the Southern part of Ghana to buy the produce of the farmers in the Upper East Region and beyond.

The above outlook by the people to the challenges at the schemes which were meant to be community owned, operated and managed by them raised a lot of questions regarding the feasibility studies by the various agencies and the proactive measures put in place by the government before the implementation of these schemes. Looking up to an external body to help operate and manage the schemes contravened the very spirit of the principle of community ownership of the schemes. This attitude necessitated the search for answers from the relevant agencies regarding their respective roles in the planning, implementation, operation, management, monitoring and evaluation of the schemes to ensure that they actually met the goals for which they were set up.

These aspects are addressed in the next chapter within the context of the SL framework which is deemed as an appropriate strategy to use in the assessment of the relevance and efficacy of these schemes in the lives of the people as a poverty intervention measure in the KNWD. As Banik (2006) states, “we need to seriously question the effectiveness of current developmental efforts”²⁹. So what could have been done differently to enhance the achievement of the intended goals of these schemes as a poverty reduction intervention? Attempts at answering this question called for the views of the bureaucrats who are also stakeholders in the schemes.

But an important issue for reflection in this study is whether actual poverty reduction, especially in the rural areas, is one of the issues that keep most politicians in a developing country like Ghana awake at night? This is the rub.

²⁹ Banik (2006): Poverty, Politics and Development: Interdisciplinary Perspectives p. 19

5. FRESH THINKING, OLD BEGINNINGS

“The frequency of my visits home before the introduction of the irrigation scheme drastically reduced because as at then, anywhere I turned, almost everybody was in dire need of assistance in one way or the other. But now, things have changed for the better. Sometimes, even some of the people offer me ‘something’ for my fuel”³⁰ Paramount Chief of Kazugu-Pe Thomas Aluah Asangchira.

5.1 Is there any justification for the existence of the schemes in the KNWD?

The statement above by the chief of Kazugu, reflects the views widely held by the people not only in that community but at Nania as well. There was a positive assessment of the schemes in both communities, a case that was usually made for the benefits of the schemes as compared with the period without them.

But being in the communities, observing and interacting with various people also revealed another dimension to the schemes that may challenge this very positive conclusion. So, once again, it is important to be cautious with the assessment.

In chapter two, I opted for a definition of poverty in accordance with the sustainable livelihood approach, due mainly to practical reasons: its ability to take into consideration specific local conditions as well as its all-embracing nature. Poverty was basically conceived, for the purpose of this study, as a lack of assets needed to generate satisfactory livelihood outcomes (i.e income, well-being, vulnerability, food security and sustainable use of natural resources). And the main asset category here are the five capitals in the sustainable livelihood framework- natural, human, social, physical and financial. These constitute a context specific, more focused and effective pillars on which poverty reduction

³⁰ Personal Interview: 28.06.10

strategies revolve around, if project success is the primary concern of the implementing agencies. An assessment of the five capitals in any poverty reduction strategy reveals the extent to which the local content has been considered. This offers a better opportunity for the successful outcome of the poverty reduction strategy in question. And the question for this study is whether these were taken into account before the introduction of these schemes in the KNWD?

Chapters one and three, indicate the conditions in the KNWD that necessitated the policy intervention. Prominent were the low level of education in the district, the poor soils and weather conditions in an area, the absence of any known mineral deposits, the occasional floods in the district, lack of good access roads, limited commercial centres etc. These conditions were implicated in the poverty situation of the people, and understanding them provided the opportunity for a well informed intervention with a real meaning to the people in the communities concerned. These conditions portrayed the level of available asset endowments to the various communities and constituted the basis for the choice of the small scale irrigation schemes by the government of Ghana in collaboration with her development partners as the appropriate poverty intervention measure in those communities. So, how has the policy been implemented and with what effect?

5.2 Cutting Corners?

The KNWD is a deprived district in several respects relative to other districts in Ghana. To mitigate the effects of this deprivation, and to expand the choices of the people through the enhancement of their livelihood options, agricultural intensification as a livelihood strategy was thought to be the best option for the people. This presupposed available land and the ability to store water for usage in the dry season, which are natural capital endowments in the communities and could be harnessed. But as with the SL approach, this natural capital has to be

effectively combined with the others for optimum benefit. A feat that demanded a collaborative effort from all stakeholders.

Constructing these irrigation schemes to be operated and managed by the communities meant that was a better arrangement in terms of management options. The unstated assumption by government was that once the schemes were community-owned, there would be efficiency in their operation and management. This option was certainly based on experiences of government-supported irrigation schemes, which to a large extent had been a huge drain on government in terms of financial support, as a result of poor management. Some of these large scale irrigation schemes were seen as failures. With the experience of managerial problems which resulted in under-utilised and poorly maintained projects, the alternative was the community-owned small scale irrigation schemes, of which Paga-Nania and Kazugu were beneficiaries.

This approach, though commendable, was revealed in this study to have failed in so far as operations and management (O&M) went beyond the mere maintenance and control of water at the schemes to issues that evidently lay beyond the capabilities of the communities. One of the underlying conditions in the KNWD was the low level of education. This was evident from the field survey. The result was that most of the problems militating against the schemes were viewed by the people as insoluble, and they awaited government support. So what went wrong?

The onset of the schemes, especially at Paga-Nania, was inherently doomed to fail. The government entered into an agreement to hold the land within the irrigation scheme in trust for the people but it was done without compensation for the landlords. This created some resentment on the part of the landlords at Paga-Nania who had repossessed their land in direct contravention of the agreement. This action brought about problems with access to land for cultivation at the

irrigation site by many community members who claimed the land was being allocated to friends, town dwellers and relations.

On the contrary, this was not the case at the Kazugu scheme where such an agreement was not signed with the government because that scheme was community driven. The problem at Paga-Nania was lack of the needed education about the agreement and an oversight body to enforce it. It is true that mere process and structures would not necessarily ensure the success of the schemes, but without them the schemes were doomed to fail.

Farmers at both schemes lacked the needed training, and the financial and technical support that should have created the enabling environment for the people to operate and manage the schemes effectively were also lacking. However, no agency in the district accepted the responsibility for the training of farmers in on-farm water management and farming system decision making. The absence of these measures, and the fact that government moved very fast in constructing and handing over the projects indicated that the government of Ghana, under the guise of community projects, simply wanted to get irrigation off her agenda instead of the stated goal of reducing poverty in rural areas. This attitude of the government was seen to be anything but laudable.

Though both communities engaged in dry season farming before the introduction of the schemes it was not communal in outlook. This meant the current schemes that demanded a collective farmer participation in the operation and management through a community level organisation as WUA, was relatively a new concept. Hitherto, farmers managed their wells or gardens individually; but in the case of the Nania gardens only the water body, which was without irrigation facilities, was viewed as a communal property. But did it elicit the desired communal spirit in terms of its maintenance then? This communal spirit, which is partly a manifestation of social capital in the SL approach was not as evident at both schemes in the study area. This was not taken into consideration by government

in the implementation process. The communal spirit was weak at the Nania scheme because of some problems like the inequitable distribution of land, water, inputs, and alleged financial inpropriety by some of the WUA executives. But in the Kazugu scheme, the farmers were simply not organised into any recognisable group. The department of cooperatives made it clear that it was not aware of the Kazugu scheme. The government through her decentralised units- IDA, MoFA etc, could have operated and managed the schemes in collaboration with the communities in a manner that would enable these units to gradually ease out with the communities eventually taking over full control of the schemes. This important aspect which modifies peoples access to the livelihood resources or capitals was conspicuously missing in these communities.

The above situation degenerated into an observable general lethargy at both schemes as farmers cultivated only a few crops basically for domestic consumption. Though most claimed to have gone into the farming for financial reasons, there was no entrepreneurial spirit. The provision of credit facilities and agricultural inputs by private agencies could increase personal stakes of the farmers in the irrigation farming. High personal stakes can generate the needed motivation as farmers would have had some obligations to meet which were tied to the overall success of the schemes. This lack of self-motivation, resulting in low productivity and maintenance of the schemes cannot be seen wholly as a failure on the part of the farmers. But the manner in which the government implemented the policy has a part to play in that regard as I shall now argue.

5.3 Politicising Poverty Reduction?

Almost everything about our lives is tied to the fabric of politics of the day, and poverty reduction is not an exception. So, the chiefs and opinion leaders as well as the politicians all purport to act in the interest of their people. Thus, the chiefs and opinion leaders could lobby the government of the day for development

projects to be brought into their communities. This was the case at Kazugu where the chief wrote numerous letters to various agencies canvassing for support for the construction of the irrigation scheme. Although a commensurate effort could not be said to have existed on the part of the chief of Paga for the Nania scheme, his influence on the project could not be discounted.

All these efforts by the powers and institutions in question have been made in the interest of the rural people. However, the demonstrated level of commitment by government, in the case of both schemes, and that of chief of Paga, in the case of the Nania scheme, left much to be desired. A remarkable progress at reducing the level of poverty could have been made if farmers understood and experienced the actual promise held by the introduction of the schemes to improving their household income and livelihood as a whole. But on the basis of evidence from the study, this was a far cry.

The people were not well equipped to operate and manage the schemes. Whereas Nania had a leadership crisis, Kazugu did not even have a farmer group let alone an active leadership structure. The operations and management costs did not fall within the reach of both communities. There was the general feeling that the government had abandoned the communities after constructing the dams. There was no ready market for the produce in times of harvests. This predisposed the farmers to exploitation by middlemen as well as the market queens. This, the people stated was a pain to them. The Paga-Nania scheme, as earlier noted was fraught with issues of access and distribution of land as well as water use rights, besides allegations of financial impropriety by some of the leadership; a situation which defied resolution but could have been taken care of with the intervention of the chief of the area given the level of respect and power he has in the community.

These problems at Nania- lack of equitable access and distribution of land, water use rights, and the financial inpropriety, affected the performance of the scheme

greatly. For instance, farmers were not readily willing to pay their water levies, they refused to recognise the leadership and wanted to elect a rival leadership. In addition, there was no communal spirit any longer, which was a sign of protest against the activities of the leadership at the scheme. Farmer dissatisfaction at this scheme was evident in several ways as exemplified by the lament of one female farmer that;

*“ I have been allocated a plot at the far end of the canal, closer to the border (i.e the Ghana-Burkina-Faso Border), and I have since been sitting there for a number of days now waiting for water for my crops but it does not come. The scheme serves the needs of the strong people, but for us, who will fight for us?”*³¹

This was not an isolated feeling, as others like her were merely silent though full of rage regarding events at the scheme. For instance, there was a case of a farmer who refused to be interviewed because he felt there was nothing worth talking about on the part of the scheme. He even decided to walk away from his own house just to avoid the interview. The general resentment was felt during the FGD session in the community when it was revealed that the government supported farmers with some subsidised prices of fertilizer. Each community was then given a number of coupons to be distributed to individual farmers to enable them to purchase the fertilizer at designated depots. And yet again, the secretary was alleged to have given the coupons only to his cronies and relations, while reserving a lion's share to himself. So most farmers who were in need of fertilizer were deprived as a result of that action. One farmer noted during the FDG that *“ they used our names to secure the coupons, so how come things have turned to be the way they are?”*³² This was in reference to the selective

³¹ Peronal Interview Session at Paga-Nania

³² FGD Session

distribution of the coupons even to people who did not have immediate need of fertilizer. This generated great dissatisfaction among the farmers.

These problems were not addressed because of the absence of an existing structure to do so, besides the non-existent WUA leadership. Hence, the central bolt of the scheme was missing. So, for the success of the scheme, there was the need for an oversight body beyond just the community WUA leadership, to handle challenges as these as they arose. This was a vacuum that the District WUA Council purported to fill but with what degree of efficiency?

The composition of the Kazugu scheme on the otherhand was relatively better though it also still lacked a high level of communal spirit. There was no farmer group, as indicated earlier, though according to the chief of Kazugu who happened to be at the FGD session, he had on several occasions admonished the farmers to constitute themselves into a group. Undoubtedly, the absence of the farmer group affected them in several ways as I argue below. For instance, they could not access any credit facility, they lacked a collective bargaining power when it came to the sale of their products to the market women, even on their farms. In addition, they could not agree on a systematic planting arrangement to maximise the marketing of their produce, and they had no access to any technical support services from MoFA. Though there was no technical support, MoFA indicated Kazugu had been assigned a TO. This issue could be resolved if there was an existing leadership to follow up on such claims.

To give MoFA district office at KNWD an idea of the actual situation on the ground at Kazugu, I involved a TO in the FDG session in the community. During the session, it was observed that the TO wanted to use the opportunity to educate the farmers on basic pest control measures. This was discouraged because it was not the focus of the gathering. But it exemplified the situation the community faced with the farming. Just like the Nania scheme, Kazugu also complained of occasional water shortages. However, on the part of Kazugu, they saw the lifting

of water from the dam by some farmers with water pump as part of the planned farming activities. But the action also created artificial water shortages at the scheme; a situation that meant the resource was being over exploited.

Access and distribution of land were satisfactory in this community, a condition necessary for the success of the scheme. Women were also given much priority in the case of access to irrigation facilities, a situation that was lacking at the Nania scheme. But can it be said that because Kazugu was a community driven project, played a greater role in these vital areas of access to land and water for all farmers at this scheme? Further research would be needed to address that hypothesis. The distribution of the subsidised coupons was also not properly done in this community, partly due to the lack of leadership as well as an effective TO. The officer from MoFA who brought the coupons was alleged to have distributed them to anyone on sight upon his arrival in the community; a situation which resulted in non-farmers receiving coupons while the actual farmers were yet again deprived of the coupons. This was an avoidable situation.

With these challenges facing the schemes, a widely held view was that the government together with the chiefs and opinion leaders did not implement the projects in a manner that could have ensured their success. This leaves the question open as to whether the schemes were introduced for self-aggrandisement by the chiefs and opinion leaders of the respective communities and for political reasons, by the government or in the real interest of reducing poverty in the communities? This is yet another contentious issue that would be difficult to settle in this study.

However, it was evident from the performance of the schemes that there was no sufficient commitment regarding their implementation. If the necessary attention was given to these projects during the implementation stage, efforts could have been made to include the necessary structures that would facilitate the operations, management and evaluation of these schemes. A separate unit could have been

charged with these activities with occasional oversight by the Ministry of Food and Agriculture (MoFA). This administrative unit could include some community members who would eventually take over the operations and management of the schemes. They could be empowered to embrace the capacity to address holistically the whole gamut of challenges, (from access to land to the eventual sale of the produce), facing the farmers at the various schemes as a whole. The various WUAs as well as the department of cooperatives were intended for such purposes, but as shown earlier the WUA's lacked the needed education and skills coupled with their sudden induction into the operation, management, monitoring and evaluation of the activities of these schemes. This was a major flaw on the part of government towards the implementation of the schemes aimed at reducing poverty in these communities.

5.4 White Elephant or Committed Poverty Intervention ?

What roles were the various agencies playing to ensure the success of the schemes if they were not meant to be white elephants? The first point of call in addressing this issue was the political leadership. Politicians are particularly important especially in a developing country like Ghana where they wield a clout in several ways especially in relation to rural poverty reduction. Besides evolving the policies, they have the added task of overseeing that the agencies concerned with the implementation of the policies are well resourced to take up the challenges.

However, dealing with politicians in most parts of the developing world is often a nightmare. As Banik (2006:72) notes “ the nature of politics and public policies often determines how successful economic growth can improve the wellbeing of the poor. Attempts to accelerate economic development and reduce poverty are fundamentally political issues which often run into political obstacles”. So the politicians are mainly concerned with making decisions that would ensure their

re-election into power. At election times, promises are made to the people even concerning essential services that the government legitimately owes to the people to provide e.g drinking water, access roads, rural electrification etc. which are not provided once re-elected. This attitude ends up derailing development processes. However, the low level of education of the rural people, makes them unaware that the government owes them some essential services, let alone demand them. Besides, politicians seem to benefit from the poverty of the people through clientelism, a practice that locks the poor people and the politicians in an inextricable relationship. So what was the contribution of the political leadership to the success or otherwise of these irrigation schemes?

5.4.1 The Regional Co-ordination Council

In an interview with the Upper East Regional Minister- Hon. Mark Owen Woyongo, he indicated he was granting me the interview as two personalities- one as a politician and the other as a father. That was interesting but at the same time accurate; a situation many politicians recognise but lack the courage to mention. It is interesting because the responses of him as a politician reflected the campaign promises and vision of the government, which he represented. And it is accurate because the responses as a father, recognised the actual state of affairs of his people and his deep desire to help though politically constrained.

He acknowledged that the immediate intervention government could introduce to help the people was the dry season farming to bring more land under cultivation, to provide badly needed food for the people during that period which was usually the lean season in the region, and to provide jobs for the people especially the youth which would stem their migration to the southern part of the country in search of non-existent jobs. Laudable ideas.

To achieve these goals, government through MoFA and IDA desilted and rehabilitated 230 small dams in the region, among which were that of the Paga-

Nania and Kazugu dams. However, at the time of this study, there were heaps of soil in the middle of the two dams in question. Worse of it, the contractors had abandoned the sites, especially at Paga-Nania where the spillway was also destroyed by the contractor with the aim of constructing a better one. When this was brought to the notice of the Minister, he indicated that the Irrigation Development Authority (IDA) was charged with the responsibility of overseeing the rehabilitation, but intimated that the situation was complicated by the nature of the award of the contracts.

The contracts had, accordingly been awarded from Accra, the national capital to contractors who hardly knew the sites they were to work on. The Regional Co-ordination Council did not know the competence of these contractors and was not even in contact with them because the Council did not have the right of oversight on such contracts. In addressing the issue, he indicated that he had sent a letter to the Agricultural Sector Minister to localise the award of such community oriented project contracts. This could enable the Co-ordination Council to effectively monitor contractors who won such projects. Hope was, however not lost as he indicated that the contractors engaged for the rehabilitation of these dams would be sought to complete the projects. The idea of small scale irrigation in rural areas is a better strategy to improve upon the lives of the rural poor, but the manner in which the strategy has been pursued, as argued above, does not guarantee the success of the schemes.

With regard to marketing the produce, the Minister indicated he had lobbied a private company-Trusty Foods, located in the Port City of Tema to buy the produce as a temporary measure. The company had also been asked to discuss with the farmers for the provision of inputs to enhance their production capacities. The long term solution to the marketing problem was for the Northern Star Tomato factory located in Pwalugu, a town in the region, to be streamlined to enable it come into operation. He noted that management of the factory was

centralised at the national capital, Accra. Hence, pertinent issues that needed to be addressed to enable it to come on stream were not being tackled. So, the first task was to see to it that there was a resident management team in the region.

The Ministry of Trade and Industry was also asked to sell part of the shares of the factory to the farmers, thus raising their stakes in it. This could ensure their commitment to its operation, and hence, a legitimate reason to sell their produce to the factory. However, a visit to the factory revealed an empty premises, not even a security officer could be spotted within the yard. So was this another political talk? Time would answer this question. Investors in tomato preservation were accordingly also being sought and would be encouraged to come into the region.

There were women popularly known in the region as “market queens” who usually came into the region from the southern parts of the Ghana to buy the tomatoes during the harvest season. But lately, these women proceeded to Burkina-Faso, a neighbouring country also involved in the dry season farming, to buy the same tomatoes left behind in Ghana. This was an issue that worried the farmers as their tomatoes were left to rot due to a glut in the harvest season; and therefore, a loss of their investments. This issue was brought to the notice of the Minister as well. He acknowledged that it was a real problem in the region but stopping the women from crossing over to buy the tomatoes in Burkina-Faso would mean flouting international trade agreements of the sub-regional free trade treaty between the Economic Community of West African States (ECOWAS), of which Ghana and Burkina-Faso are signatories.

In the FGD session, the farmers alleged these women carried contraband goods across the border for sale, and in return purchased the tomatoes in that country. When this was put to the Minister, he discounted it and indicated he had made the Ghana Customs, Excise and Preventive Service (CEPS), to be extremely

meticulous in screening the trucks of these women but at the time of the study, nothing incriminating was yet found with any trader.

A point worth noting is that some of these women are extremely wealthy by Ghanaian standards and do sometimes support some politicians financially in their campaigns for election. So the real issue, I surmise was the lack of political will to stop the trend; measures could be explored such increasing excise duties on every truck entering the country with tomatoes to a level that would make it economically unattractive to cross over to purchase a product that could easily be procured within the region. This could be argued to be on the lines of protectionism, however, every state accepts that nascent industries need a certain level of protection for a while to enable them take off smoothly with production.

With the provision of inputs, he mentioned the subsidised prices of fertilizers to farmers, but yet again this facility was not properly implemented, which led to several problems as alluded to earlier. Some farmers who did not immediately need the fertilizer resorted to either hoarding or smuggling it across to the neighbouring countries of Burkina-Faso and Togo where higher prices could be obtained. From the above, the role of the politicians in ensuring that policies were effectively implemented cannot be overemphasised, but due to political “expediency” effective implementation, monitoring and evaluation have been sacrificed. This makes poverty reduction a political dice tossed around at the will of the politicians.

5.4.2 The Irrigation Development Authority (IDA)

Irrigation development in Ghana is guided by the Accelerated Agricultural Growth and Development Strategy (AAGDS), operated under the umbrella of the Agriculture Sector Services Improvement Project (AgSSIP). Within AgSSIP, the Ghana Irrigation Development Authority is charged with the responsibility for irrigation related research, technology transfer and priority targets in small and

micro-scale irrigation schemes³³. This made IDA relevant in the case of Paga-Nania and Kazugu schemes.

In an interview with the Regional Director of IDA, he noted that many of the duties existed merely on paper, apart from their heavily engineering support services to the schemes which he acknowledged were not as much needed by these schemes as the social mobilisation and agronomic skills necessary for the profitable operation and maintenance of the infrastructure. In reference to the Paga-Nania and Kazugu schemes, he stated that the role played by IDA was the design, construction and supervision; a role he accepted as inadequate for the successful operation and management of the schemes. For instance, the supervisory role was relegated to the background, with the reasons of limited human and financial resources, which greatly compromised the extent and quality of delivery which invariably negatively affected the development and productivity of the irrigation sub-sector under their ambit.

This was apparent when information regarding the list of dams under construction was not readily available to the Authority. For instance, the Paga-Nania dam which was under rehabilitation but abandoned by the contractor was not a known project to IDA, and yet that was the institution mandated with such a supervisory role. A situation, yet again explained by the fact that the bureaucrats at MoFA head office, by-passed IDA and awarded contracts for execution without the relevant information being relayed to them. In addition, not only were they inadequately resourced, but they were also most often sabotaged in their line of duties.

Not being able to conduct their supervisory role meant that the Authority was not conversant with the dam sites. This came to light when the design of the Kazugu scheme was drawn in such a way that the length of the canal, originally pegged at

³³ MoFA 2006: Draft National Irrigation Policy, Strategy and Regulatory Measures

800 metres, ran into some avoidable obstacles and also would have brought less land under cultivation as compared to the modified structure, issues that were unknown to IDA, partly due to their inability to visit the site for firsthand information. The modified structure which was made by the chief of Kazugu, a structural engineer himself, gave the dam two canals on both right and left flanks; a design that still maintained the original 800 metre canal but now divided into 500 metres for the left flank and 300 metres for the right flank.

In addition to IDA not being able to perform their role effectively, there was less collaboration, for instance, with MoFA on activities at the schemes. Their absence gave room for illegal lifting of water at the various schemes. This put a strain on the demand for water as the actual command area then exceeded the designed command area for the schemes. MoFA was supposed to offer technical support services to the farmers but in addition, they provided water pumps to some selected farmers at the Paga-Nania scheme for experimental dry season maize farming, a crop with an insatiable thirst for water. This activity took the IDA by surprise as it was not contacted by MoFA before the decision was made in that regard; an indication of the weak institutional network in the KNWD and the Upper East Region as a whole.

5.4.3 The Ministry of Food and Agriculture (MoFA)

All the relevant agencies to agriculture are subsumed by MoFA.. So the community-based irrigation schemes were implemented by MoFA in collaboration with the International Fund for Agricultural Development (IFAD), aimed at reducing rural poverty in the region.

However, after the construction, MoFA, through her decentralised units at both the regional and district level was to provide technical support services. This has not been done to the expected level. The last time the MoFA at the regional level

did an evaluative survey of the small scale irrigation schemes was in 1996³⁴, a time when some of the dams like that of Kazugu, were not yet constructed. In addition, most of the dams were yet at their nascent stages which made the enthusiasm of users very palpable. The usual problems, as with the other departments were the human and logistical constraints, which made the monitoring and evaluation of these projects very difficult.

At the district level, the last recorded monitoring and evaluation activity was in the month of May 2007³⁵. This exercise had mixed results as most of the WUA members could not be met due to various reasons ranging from lack of information to being obstructed by rains, funerals etc. At this exercise however, the team was made aware of the alleged misappropriation of the association's funds by some of the WUA executives at the Paga-Nania community. Interestingly, this issue was casually mentioned in their report with a slight indication that it needed immediate attention from all stakeholders to save the association from disintegration. It was unclear who were the stakeholders here referred to, and at the time of this study in the community- June-July 2009, the problem had degenerated. A possible failure on the part of MoFA.

In an interview with the Secretary to the District WUA Council, he noted the problem had existed for some time and described the Nania WUA as being in a state of chronic crisis. It was observed that the WUA Council in itself existed only on paper. They had no office from which to operate, the leadership itself was very loosely coordinated and hardly ever met. It was also not well resourced to enable it to monitor the activities of the WUAs. So, pertinent issues like the leadership crisis at Nania, and the lack of a farmer group at Kazugu, persistent marketing problems at the various irrigation sites were left unattended.

³⁴ UER/LACOSREP 1996: Final Report; Socio-economic survey of seven dam catchment areas in the Upper East Region.

³⁵ MoFA, District WUA Council and Department of Cooperatives 2007: Report on monitoring and Education visit for the 2006/07 cropping season levies performance of WUAs, Kassena-Nankana District.

Interestingly, the Chairman to the District WUA Council was not a farmer and seemed not to have been actively involved in the activities of the farmers.

With the District Assemblies, the Chief Executives were constrained by many other issues besides those of the rural people. There was no information even regarding the schemes at the district assembly. The best they could do was to refer one to the district MoFA offices. But, the district assemblies offered some financial assistance for the construction of some of these dams and yet that seemed to have been the end of their relationship with these communities concerning these schemes. This absence and lack of information by the assemblies was probably not far removed from the politics of the day. So once the dams were constructed, the communities were then to make do with what was available to them. This situation was also a failure on the part of those were supposed to take the necessary steps to ensure that at least the basic need of food for the rural people was assured.

5.5 A Crisis of Institutional Mandates?

The discussion above could be seen to project a gloomy picture of the schemes that could be said to contradict the views and statistics collected in the communities in relation to the performance of the schemes. On a cursory view, it could be contradictory but viewed against the expectations of the people, this can partly be explained. A reed to the drowning man is a strong saving branch of a well rooted tree! So to the people, the fact that the schemes even exist in their communities to provide them with vegetables for domestic consumption was on itself enough contribution.

However, there was the possibility of the schemes performing better if proper implementation had been done. But right from the start, institutional mandates concerning the small scale irrigation development were unclear. This was seen in the conflicting roles of MoFA and IDA, the ill-equipped related departments, the

absence of a properly constituted oversight body on the activities of the dams; these among others were causes for failure. The lack of structures to resolve issues at the schemes like the land and water use rights as well as financial inpropriety at Paga-Nania, was a serious setback to the effective performance of the schemes. As indicated in chapter one, the intentions of the government were not enough, but had to be matched with action in order to put food on the tables of the rural folks. This aspect of matching the words with the actual effective implementation of the policy has been the difficult part for the government.

The feasibility studies were extremely optimistic and an assessment of local resource endowments and unpiloted assumptions were made to justify donor funding, but the overall execution of the projects could be said to have lacked the needed commitment and structures that would ensure the successful operation and management in ways that could have enhanced the opportunities of the people and thus meet the intended goal of reducing poverty. It is to be recognised that the schemes could not single-handedly achieve this goal due to the complex nature of poverty itself. Also, the unstated assumption made the implementation agencies to take for granted the needed structures, capability, willingness and the collective spirit of the people to the success of the schemes. But has it been worth the effort? Come the next farming season, this question will be answered by the farmers at these schemes.

6. CONCLUDING REMARKS

6.1 Conclusion

The purpose of this study was to assess the contribution of the small scale irrigation schemes (SSIS) to the improvement of the lives of the people in the KNWD of the Upper East Region of Ghana, with Paga-Nania and Kazugu as case studies. In addition, it was to look at the operations of these schemes and their various capacities to continue to serve as complementary sources of livelihoods to the people in these communities.

Personal interviews, observations, FGDs were used to obtain the views and perceptions of the people. In addition, the benefits drawn by the farmers from the schemes were sought. These benefits, as revealed in the study were the justification for the existence of these schemes.

The basic object of the schemes was poverty reduction. And the study, in various ways measured the outcome of these schemes and compared to the objective of poverty reduction in the communities.

The outcome of the study varied, depending on who was doing the assessment- either the people in the communities, the various government officers or the researcher, based on information from observation, FGDs and the personal interviews. These views though contradictory to some extent, gave an inkling of the perception of “success” in itself.

However, it was clear that the people held the contributions of the schemes in high esteem. Benefits included the availability of food for domestic consumption, increase in the levels of farmer income, jobs for the people especially the youth and thus reducing the incidence of their seasonal migratory tendencies as well as reduction in theft cases. Others were able to secure the necessary items to pay their bride prices and also acquired personal belongings. Some level of savings

were also made by some of the farmers. The incidence of lost animals to the communities due to the animals wandering far away in search of drinking water had also been reduced.

A catalogue of the benefits continued as women no longer had to walk for long distances in search of water for domestic purposes including building activities by the men. With these benefits, the people expressed their satisfaction with the contributions of the schemes in general, though they identified several challenges they faced in relation to the irrigation farming. Taking the views of the people into consideration, the conclusion would be that to a large extent, the schemes have met the goal of contributing to the improvement of their lives. And hence, successful.

However, some of the bureaucrats had mixed reactions regarding the performance of the schemes. Those officials at the helm of affairs like the District Assemblies, Department of Co-operatives, etc lacked sufficient information regarding the performance, and sometimes even the existence of the schemes. A sad but real reflection of the situation in the field. Some officers e.g in the district assemblies, shifted the responsibility of the schemes to other departments with claims that oversight functions were specific to those departments in question.

Those officers who had bits of relevant information on the schemes though under-performing in their respective roles in themselves, like MoFA, IDA, Regional Co-ordination Council, saw the schemes to be successful. However, they agreed that there existed shortcomings in relation to the implementation and operations of the schemes which invariably had some adverse effects on the relative performance and outcomes of the schemes.

Observations, interviews and the FGDs, did reveal that some positive contributions as cited by the people earlier, had been made. However, objective

assessment of the schemes showed that the gains were not very impressive and did not merit the kind of appraisal given by the people. This view contradicts the claim of satisfaction by the people in the respective communities and thus needs to be resolved.

One possible explanation to the positive appraisal of the schemes by the people would be their low level of expectations. Through my interactions with individual farmers and community members, it became clear that being able to obtain vegetables for domestic consumption was seen in itself to be a sufficient benefit. The low expectations contributed to such a positive appraisal. But I am of the view that the irrigation schemes were not constructed to provide vegetables merely for domestic consumption though this was an important element. But the people were satisfied by the mere existence of these schemes as they saw this to be better than nothing as they put it. But optimum benefits have to be drawn from these schemes. This would require that the people have higher expectations of the schemes. Further studies would be needed to uncover the reasons for the low expectations of the people.

Secondly, if schemes are to meet their intended goals, then the benefits have to extend beyond domestic consumption to production for the market. So the main objective of poverty reduction would have to be kept in sight as against the evaluations by the people. Figures were collected regarding the financial status of the people before and after the introduction of the schemes and these indicate some level of success. But these figures may not be very reliable. Also, other benefits like the ability to acquire personal belongings and the realisation of a dignified self were important elements. As one farmer put it “ *we are now also capable of taking control of our own affairs*”³⁶ - a direct reference to the fact that they could also by Ghanaian standards feel part of the general society.

³⁶ FGD session at Kazugu: 04.07.09

That realisation was important because it revealed that the success of a project is not limited to the physical impact that it makes but the general influence it has on the lives of the people. Boosting the morale of the people in the community and giving them the needed self-confidence as a people in their own right and being in-charge of their own affairs was necessary and invariably an indication of well-being. In effect, though characterised by many bottlenecks, the schemes, in the light of the experiences of the people could be said to have made some positive contributions to their lives. But the contention I have with the evaluations of the people is that the schemes were meant to provide more than those benefits to reducing the poverty level in the communities and the capacity to achieve that exists and needs to be utilised.

Reducing the level of poverty in these communities needs the injection of some entrepreneurial spirit into their approach to food production at the various schemes. Cultivating for domestic consumption can hardly be said to be a strategy capable of getting people out of poverty besides locking them into a vicious cycle of production from farm to the cooking pot only during the farming season. Marketing the produce could be guaranteed as that would help boost the morale of the farmers. Without these aspects, I find it difficult to agree wholly with the people regarding their evaluations of the schemes.

Besides, the question of the schemes being a means of promoting sustainable livelihoods in the Upper East Region remains. Sustainability as a concept is observed to be just as contentious and variable in usage as the concept of poverty itself. However, within the context of this study, the schemes would be considered to have provided sustainable livelihoods if they afforded opportunities for the people to adapt to the challenges posed by their environment. This would mean the capacity of resilience in the face of stresses and shocks and also capability to cope and recover from these shocks, as for example, the common

situation of lack of rains, the occasional flooding and the recent phenomenon of the short duration of rains in these predominantly farming communities.

The coping, adaptation and resilience could be possible without the over exploitation of the natural resource. It certainly would be a difficult task to establish the sustainability question in these communities in relation to the schemes at this stage. This is as a result of the many factors, some beyond the capabilities of the people e.g Climate Change. If Climate Change progresses as widely held by scholars, then the long term viability of these schemes would be difficult to guarantee. This is another reason to be cautious with the positive assessment of the schemes by the people. It is possible they either ignored the wider picture or were not aware of it beyond the immediate household benefits of the schemes. Besides, over time, it is possible that these schemes could be irrelevant to these people as livelihood options change, hence it is safe to talk about the schemes helping the people to cope rather than adapting.

In addition to the projected long term effects of temperature rise, other important changes might occur such as changes in terms of trade, migration, especially in this part of the country which has a history of out migration to the mineral resource extraction sites in the southern part of the country by the youth, and the recent discovery of crude oil in Ghana. This leaves the sustainability question still open and the capacities of the schemes to continue to serve as complementary sources of livelihoods to the people in the various communities would need further investigation.

However, some unsustainable use of the resource could be observed such as the illegal lifting of water from the dams with the tacit agreement of MoFA. The water bodies as well as their catchment areas were not properly protected, water and land use rights were issues of contention especially at the Paga-Nania scheme. These issues affected production at the schemes and efforts at reducing the poverty level in these communities.

Besides these issues which made it difficult for me to wholly agree with the positive appraisal of the schemes by the people, the study also uncovered some major problems that revolved around the implementation, operations and management of the schemes. These issues affected the operations of the schemes to the extent that if not urgently addressed, it could be difficult, if not impossible, for the schemes to meet their intended goal-poverty reduction.

Prime among these identified problems was the process of shift in ownership, operations and management of the schemes from government to the communities. The assumption was that such a switch of ownership, operations and management from government to the communities would result in the efficiency of the schemes in terms of output. Bringing the people on board to manage their own affairs is commendable, and probably a good way to ensure the success of projects, but the process needs to be properly done. The approach should not have been an immediate switch of management by government from the onset of the projects but a gradual process with collaboration from the community members giving way for the government to systematically ease out of the project while increasing the role of the community members (i.e WUAs).

The mode of implementation of the schemes also revealed an unstated assumption on the part of government that the commitment of the people towards the operations and management of the schemes was automatically guaranteed. The possible reason being that the dry season farming was considered by government as the only livelihood option for the people during the dry season. But this was a false assumption as livelihood diversification in the rural areas has been known to be the norm rather than the exception and these communities were not exceptions to that.

The human resource capacity to manage the schemes was visibly lacking and there were no structures in place to enhance it. This was vital to the success of the schemes as it would have helped the people to handle the daily problems

confronting the schemes but was conspicuously missing in both communities. Instead of the people being empowered to operate and manage the schemes, they were still dependent on the support of government even to maintain the dams. This was a pointer to the failure of the empowerment hopes of the government. In that regard, the challenges faced by farmers at the schemes especially at Paga-Nania, due to issues of land and water use rights and alleged financial malfeasance could not wholly be blamed on the people as the capacity to handle those issues was not even there in the first place. There was the need to take care of that; but the government concentrated on holding on to the lands at the schemes to ensure equitable and trouble free access by all community members. This concentration on equity at the schemes by the government led to the relegation of the aspect of competence to the background. But it would have probably served the communities better if the issue of competence had been seriously considered, which could possibly have solved the equity issue.

The absence of this human resource capability heavily retarded the progress of the schemes as was seen in the case of Paga-Nania though Kazugu too was not an exception. The worst part of it was that no agency claimed the responsibility of building the competence of the people. There is no doubt that high quality management was a requirement for the success of these schemes but this capacity was clearly missing in these communities. This I think was a possible failure of policy implementation by the government.

There were also clear signs of lack of collaboration between MoFA and IDA in the operations and management of the schemes. This was evident in the case of Paga-Nania where MoFA issued water pumping machines to some farmers for experimental farming without the knowledge of IDA, a situation that brought about some undue pressure on the demand for water by farmers, ultimately denying those at the tail end of the canals the right to water their crops as was

indicated by some farmers. This practice also called into question the sustainable use of the scheme.

In addition to the inequitable distribution and access to land and water, access to inputs and technical services, credit facilities, as well as general support services to farmers at both schemes were severely limited. Factors that would have certainly enhanced production and consequently, reduction in poverty levels.

6.2 The Way Forward

It is agreed that the intervention measure was relevant to the needs of the communities. These schemes had the potential of addressing comprehensively the causes of poverty as stated in chapter two of this study and as revealed by the problems militating against the northern sector in general as indicated in chapter one and the KNWD specifically as in chapter three. The perceptions and statistics gathered proved the people were satisfied with the performance of the schemes and yet objectively the situation cannot be said to be a success as I earlier on argued.

In accordance with the SL approach, the intervention measure did fall short of expectation as portrayed by the challenges that limited production to domestic consumption. Most of the challenges could have either been avoided or minimised if there were a real commitment on the part of the politicians as well as the chiefs and opinion leaders. The schemes could have been piloted to help identify inherent but specific problems to the various communities. However, it seems to have been an exercise of lifting and replanting wholesale projects that had achieved some level of success elsewhere.

In addition, projects of these kind do benefit substantially from a multi-sectoral approach right from the feasibility studies to their implementation, management and operations. It was not enough for IDA to undertake a physical study meant to

provide the necessary information merely for the construction of the dams without other organisations brought in to undertake a study into the potential socio-economic and cultural impacts of such projects. This would have gone a long way to identify the strengths and weaknesses of the communities as well as the likely effects of the schemes.

It is my belief that if such a study was done, it would have been possible to unearth the various socio-economic and political barriers that challenged the schemes to their core and resulted into the observed complacency of the people in terms of the productive capacities of the schemes.

Communities in which such schemes are implemented could be given a free hand to decide as to how to allocate the land at the irrigation site for use, as happened in the Kazugu community in this study. Support could rather be given based on a study of the community land tenure system, and the existing community spirit should be enhanced. This would possibly foster that aspect of equity of access as envisioned by the government instead of rather engaging in non-binding and potentially acrimonious agreements with the communities.

The government could encourage participation in the dry season farming in the form of the provision of inputs as well as support in the marketing of the produce. The participants could be given incentives like tax breaks and access to bank loans to facilitate their operations.

That apart, it is important for the farmers to have the sense of their interest being taken care of by the government rather than implementing projects for political reasons and for personal aggrandisement. Farmers' stake could be increased in the form of the provision of various facilities and inputs. These have the potential of eliciting the needed entrepreneurial spirit of the farmers. The study at both schemes indicated that farmers were mostly satisfied to be able to produce vegetables for domestic consumption but this was only during the three month

growing season. A trend that was unlikely to reduce the level of poverty in those communities.

The process of planning and the implementation of the schemes seems not to have been transparent enough and categorical functions and roles were not clearly assigned to the relevant agencies and departments to help operate and manage the projects efficiently together with the various WUAs. Timelines were not given to allow a gradual shift of more responsibilities to the communities while the relevant departments maintained oversight functions to ensure optimal use of the resources. This could possibly have strengthened the WUAs as they would have obtained on the job training.

One interesting setback noted by the communities was that the chemical fertilizers were no longer of considerable help to their crops. And some claimed their fields had a high level of acidity. What they needed was manure which they noted was absent in their communities. With the poverty situation in the communities, animals were hardly available in the numbers that would be needed to generate enough manure for the farmers. In this regard, it would be of value to the farmers if the government provided incentives to produce manure from the grasses and stalks available instead of setting fires to these at the onset of the dry season.

The provision of improved seed is necessary for increased production. Research stations can make these available through designated points accessible to the farmers. The absence of known and certified good seeds was a problem to the farmers and in desperation to obtain these, any seed that was packaged meant it was an improved seed to these farmers. A situation that provided charlatans the opportunity to exploit the already needy farmers.

In general, the people were satisfied with the performance of the schemes, however, I hold that their low expectations in relation to what the schemes could

provide mostly accounted for such attitudes. I also hold a contrary view to the people because the schemes were introduced with the aim of reducing poverty but the people were content merely with being able to produce enough for domestic consumption, a process that cannot get them out of poverty.

Finally, I also think there was possible bias in their responses regarding the benefits derived from the schemes. This could stem from the fear of being seen as ungrateful (in Kazugu) or going along with the crowd (at Paga-Nania). This situation indicates the difficulty in getting people to answer basic questions concerning their lives. It also shows the difficulty in obtaining reliable information from people due to various distractions, in spite of the fact that I even speak the language of the people. Though it is possible on my part that I had some shortcomings like asking the right questions in the right way and right time, I hardly think it played a major part in the kind of responses given by the people. These issues contribute greatly to my stance regarding the performance of the schemes, which runs contrary to the perceptions and statistics provided by the people in the communities.

If the issues raised above are given consideration, this thesis would be an addition that can possibly contribute in no small way to completing the jigsaw of addressing poverty reduction in the KNWD of the Upper East Region and the Northern Sector of Ghana as a whole.

BIBLIOGRAPHY

- Adams, W., M. & Carter R., C. (1987): "Small Scale Irrigation in Sub-Saharan Africa". *In Progress in Geography*, 1987. Found in <http://ppg.sagepub.com/cgi/content/refs/11/1/1> Accessed 02.06.09
- Adams, W., M. (2nded), (2001): *Green Development: Environment and Sustainability in the Third World*. New York: Routledge.
- Addison, T., Hulme D., & Kanbur R. (eds), (2009): *Poverty Dynamics: Interdisciplinary Perspectives*. Oxford: Oxford University Press.
- Angelsen A., & Wunder S. (2006) : "Poverty and Inequality: Economic Growth is Better than its Reputation". In D. Banik (ed), *Poverty, Politics and Development: Interdisciplinary Perspectives*. Bergen: Fagbokforlaget
- Aryeetey, E., & Kanbur, R. (eds), (2008): *The Economy of Ghana: Analytical Perspectives on Stability, Growth and Poverty*. Accra New Town: James Currey & Woeli Publishing Services.
- Banik, D.(ed), (2006): *Poverty, Politics and Development: Interdisciplinary Perspectives*. Bergen: Fagbokforlaget.
- Bekye, P., K. (1998): *Peasant Development: The Case of Northern Ghana*. Leuven: Acco Press.
- Brabben, T. et al., (2004): 'Irrigation Can Sustain Rural Livelihoods: Evidence From Bangladesh and Nepal'. London: Imperial College. Found in http://www.dfid-kar-water.net/w5outputs/electronic_outputs/od151.pdf Accessed 09.05.09

- Bradshaw T., K. (2006): *Theories of Poverty and Anti-Poverty Programs in Community Development*. RPRC Working Paper No. 06-05, Rural Poverty Research Center, Columbia: University of Missouri.
- Burnell, P., & Randall, V. (2nd ed), (2008): *Politics in the Developing World*. Oxford: Oxford University Press.
- Crow, B. (2000): 'Understanding Famine and Hunger'. In A. Thomas and T. Allen (eds), *Poverty and Development into the 21st Century*. Oxford: Oxford University Press.
- Dani, A., A. & Moser, C. (2008): "Asset-Based Social Policy and Public Action a Polycentric World". In C. Moser & A., A. Dani (eds), *Assets, Livelihoods, and Social Policy*. Washington DC: The World Bank.
- Drèze, J. & Sen, A. (1989): *Hunger and Public Action*. Oxford: Clarendon Press.
- Ellis, F. (1999): 'Rural Livelihood Diversity in Developing Countries: Evidence and Policy Implications'. In *Natural Resource Perspectives. No 40, April 1999*. Found in <http://www.odi.org.uk/nrp/40.html> Accessed 06.05.09
- Ellis, F. (2000): *Rural Livelihoods and Diversity in Developing Countries*. Oxford: Oxford University Press.
- Ghana News Agency (12.10.08): *School Receives Computer*. Found in <http://www.ghanadistricts.com/news/?read=19524> Accessed 22.05.09
- Ghana Statistical Service, (2002): *The 2000 Population and Housing Census, Summary report of final results*. Accra, Ghana: Ghana Statistical Service.

- Grusky, D., B. & Kanbur, R. (eds), (2006): *Poverty and Inequality*. California: Stanford University Press.
- Hussain, M., Hussain, Z., & Asfaq, M. (2006): “Impact of Small Scale Irrigation Schemes on Poverty Alleviation in Marginal Areas of Punjab, Pakistan. In *International Research Journal of Finance and Economics*. Issue 6: EuroJournals Publishing, Inc.
- Kende-Robb, C., & Van Wicklin III W., A. (2008): “Giving the Most Vulnerable a Voice”. In K. Ahmed & E. Sánchez-Triana (eds), *Strategic Environmental Assessment for Policies: An Instrument for Good Governance*. Washington DC: The World Bank.
- McNeill, D., & Lera St Clair, A. (2009): *Global Poverty, Ethics and Human Rights: The Role of Multilateral Organisations*. London & New York: Routledge.
- Ministry of Food and Agriculture (2006): National Irrigation Policy, Strategies and Regulatory Measures. Accra: MoFA Publications.
- Ministry of Information (2008): *Meet the Press Series*. Found in http://www.ghana.gov.gh/ghana/speech_delivered_hon_ernest_debrah_minister_food_agriculture.jsp Accessed 22.05.09
- Moser, C. (2008): “Assets and Livelihoods: A Framework for Asset-Based Social Policy”. In C. Moser & A., A. Dani (eds), *Assets, Livelihoods, and Social Policy*. Washington DC: The World Bank.
- Scoones, I. (1998): *Sustainable Rural Livelihoods: A Framework for Analysis*. IDS Working Paper 72, Brighton: Institute of Development Studies.
- Sen, A. (1981). *Poverty and Famine: An Essay on Entitlement and Deprivation*.

Oxford: Clarendon Press.

Shah T., et al., (2002): *Institutional Alternatives in African Smallholder Irrigation: Lessons from International Experience with Irrigation Management Transfer*. Research Report 60, International Water Management Institute, Colombo, Sri Lanka.

Thomas, A. (2000): 'Poverty and the 'End of Development''. In A. Thomas and T. Allen (eds), *Poverty and Development into the 21st Century*. Oxford: Oxford University Press.

Thomas, C. (2005): "Poverty, Development, and Hunger". In J. Baylis and S. Smith (eds), *The Globalization of World Politics: An Introduction to International Relations (3rd ed)*. New York: Oxford University Press.

APPENDIX

QUESTIONNAIRE

QUESTIONNAIRE ON SMALL SCALE IRRIGATION SCHEMES IN
THE KASSENNA-NANKANA WEST DISTRICT OF THE UPPER EAST
REGION OF GHANA

INDIVIDUAL QUESTIONNAIRE

SECTION 1: IDENTIFICATION

Date of interview: -----

Name of Field Assistant: -----

Name of Irrigation Scheme -----

Name of Farmer/ Respondent-----

Name of Village/ Community -----

Compound ID -----

SECTION 2: DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS OF FARMER

1. Age of farmer-----

2. Sex of farmer-----

3. Marital Status of Farmer-----

4. Ethnic Origin of Farmer-----

5. Educational Level-----

6. Religion-----

7. How many people are currently in your household? -----
8. How many are capable of helping out on the farm? -----
9. How many actually help out on the farm? -----
10. Before you started this irrigation farming, what was the estimated monthly income of your household? Ghc
11. What is the estimated monthly income of your household now? Ghc.....
12. Before you started this irrigation farming, what was the estimated monthly expenditure of your household? Ghc.....
13. What is the estimated monthly expenditure of your household now? Ghc.....

SECTION 3: INFORMATION ON THE IRRIGATION SCHEME

14. Why did you get into irrigation farming? (Basic occupation or part time?)....
15. For how long have you been engaged in this irrigation farming?.....
16. Which crops do you normally cultivate at the irrigation scheme?
17. Why do you cultivate those crops?.....
18. How would you describe the yields of the crops? (Good, Bad, Average).....
19. Do you think it is possible for you to increase your yield? (explain why its possible or not).....
20. Besides the irrigation farming, what else do you do that earns you income?....
21. Which of those occupations brings more income into your household?.....
22. Do you get any financial assistance (remittances) from anywhere besides the credit facility? (if yes, averagely how much in a month?)

23. In which specific way(s) has this irrigation farming been of help to you?.....
24. From the above, can you say that you are better off with the introduction of the irrigation scheme than before?.....
25. During the course of the year, did you have to buy any food stuff for the household?(*If yes, probe for reasons for the purchase*)
26. What kind of food stuff did you buy? (e.g. beans, maize, millet etc.)
27. Are you able to save some money for future use? (*probe for investment in animals too*).....

SECTION 4: OPERATION AND MANAGEMENT OF THE SCHEME

28. Is the irrigation facility owned by the community or government?.....
29. How does one obtain a plot here for farming?.....
30. What is the size of your plot?.....
31. Who manages the daily operations of the scheme?
32. What is the role of government in terms of the daily operations of the scheme?.....
33. Is there any form of assistance for you from any organisation e.g. credit facility?
34. Is there a farmer association/group in this scheme?.....
35. Are you a member of any local farmer group in this scheme?.....
36. What are some of the benefits you gain as a member of that local farmer group?.....

37. How do you dispose off your produce? (taking the produce to the market directly or through intermediaries).....
38. Are there any problems with the marketing of your produce? (List them).....
39. Do you have access to Agric extension officers?.....
40. During the course of the farming season, has there been anything that prevented you from working actively on your farm?.....
41. In which way(s) did that affect your work?
42. Is there always adequate supply of water for your crops throughout the farming season?.....
43. Are you able to buy the needed items (pesticides, fertilizer etc) for the farm as at when needed?.....
44. What means of transport do you own?.....
45. Do you have a mobile phone?.....
46. Are you able to service the mobile phone as at when needed?.....
47. In case you need to make a call, are you able to get access to a phone service?.....
48. What are the challenges that you face in terms of the irrigation farming?.....
49. Is there any other thing about this irrigation farming that you would want to say or add to what has been said?.....

FGD GUIDE

1. In the view of this community, who can be characterised as poor? Who is said to be a poor person in this community?
2. In your view, does this community actually need this scheme or what else can you say would have been more beneficial to you than this scheme?
3. Who do you people think owns or is responsible for the irrigation scheme?
4. What is the role of government in the operation of the scheme?
5. What do you see as some of the benefits of the dam to you?
6. Do you think the dam has made a real difference in your lives or it merely helps you to make a living?
7. What is your role as members of the community towards the sustenance of the dam?
8. What are some of the challenges you face with regards to the irrigation farming?
9. What do you think you can do as a people about those challenges?
10. What do you expect from the government (DCE) in terms of those challenges?
11. What else do you have to add about the irrigation farming as a whole?